

# NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

# The

# Astrogram

## AMES RESEARCH CENTER, MOFFETT FIELD, CALIFORNIA

VOLUME IV

JULY 5, 1962

NUMBER 18

## Dr. Konecci Appointed 22 Ames Employees Cited for NASA Director of Superior Work Performance Biotechnology and

### Human Research

The appointment of Dr. Eugene B. Konecci as Director of Biotechnology and Human Research in the NASA Office of Advanced Research and Technology, was announced by NASA Headquarters last Wednesday, June 27.

Dr. Konecci, 37, will be responsible for directing research and development of future life support systems, advanced systems to protect man in the space environment, determination of how man can be best utilized in space flight missions, and the research required to assure man's performance capabilities in space. The latter area includes research programs in human performance and behavior.

The expanding life sciences research group at Ames will play a major role in carrying out the programs of this new office. The Langley Research Center, Flight Research Center, Marshall Space Flight Center, and Manned Spacecraft Center will participate in the program. Further, this office will utilize the facilities and trained personnel in the Department of Defense, universities, research institutes, industry, and other Government agencies.

The programs of the new office will complement the work in exobiology, environmental biology, and basic biology being developed by the Office of Space Sciences, and the aerospace medical function in the Office of Manned Space Flight which is primarily concerned with life support and environmental systems for Mercury, Gemini, and Ap-

Twenty-two Ames employees were presented with Sustained Superior Performance Awards by the Director, Dr. Smith J. De France, at ceremonies held recently in the auditorium.

In presenting the commendations and award checks, Dr. DeFrance cited the accomplishments of the group and extended his personal congratulations.

The letters of commendation signed by the Director read in part, "The mission of the Ames Research Center is of paramount importance to us all. The continuously outstanding work by employees such as you contributes much to its efficient administration... You have far exceeded the standards set for your

position, and your dedication to duty and superior performance have long been recognized by your associates."

The individuals recognized represent diversified career fields throughout the Center — secretary, illustrator, math aid, foreman, instrument maker, budget officer — and all have more than met the qualifications of the performance awards program. In many instances, new methods and techniques have been developed, work procedures standardized, and complex control systems have become operational in a minimum of time.

The NASA Sustained Superior Performance Award was established "to give employees whose performance of duties and functions are recognized as being superior in all major aspects and sustained over a period of time (at least six consecutive months)."

For the names of those employees who were recognized by their supervisors and the Ames Incentive Awards Committee for the superior performance of their duties see photo on Page 3.

## Civil Service Inspection Team to Visit Ames

Representatives from the U. S. Civil Service Commission, San Francisco Region, will begin an inspection visit at Ames on July 16. This is a part of the Commission's nation-wide inspection of NASA's personnel management program in relation to the agency's mission. A number of Ames personnel will be asked to participate in individual or group discussions with the inspection team.

pollo projects.

Dr. Konecci is a member of several scientific and professional societies and is the author of many papers and reports in areas of Life Sciences.

## Bloodmobile Visit

The Santa Clara Valley Bloodmobile will visit Ames Thursday, July 26, from 9:00 a.m. until noon.

All Ames Employees who wish to donate blood may sign up on the sheet provided for that purpose in each division and branch, or call Personnel, ext. 411, for an appointment. As before, members of an employee's family may donate also.

Blood on deposit at the Blood Center is available to all Ames personnel and their immediate families.



## THE MOON

Selenography (the science of the physical features of the moon) dates from the year 1610. Galileo, who constructed the first lunar map, also realized the existence of mountains on the moon and made estimates of their height. Lower, Lagalla, Scheiner, Malopert, Mellan, Gassendi, Langrenus, and Rheita were early selenographers.

The nomenclature of the moon is interesting because it serves to immortalize the names of many whose memory might otherwise be lost. The astronomer, Riccioli of Bologna, who published a chart in 1850, is responsible for most of the names of the interesting features. Many of the names are fanciful beyond reason.

Lunar formations have been classified as follows:

The great and, by comparison, level surfaces called "Seas" (Maria), the smaller but similar features known as "Marshes and Lakes" (Paludes), and "Bays and Gulfs" (Sinus), and the bright plains far less conspicuous and not especially named; the mountain ranges, isolated hills, uplands and peaks, and domes; the valleys, gorges and clefts, rills and cracks, and wrinkles or pressure ridges; the bright systems of rays and bright areas; and the mass of ringed structures which have been divided into walled plains, mountain rings, ringed plains, crater plains, craters, craterlets, crater cones, crater pits, obscure and ghost rings and depressions. These will be defined and talked about in following issues of the Astrogram.

## Lowell Pendergraft Retires

Lowell Pendergraft, Machine Branch employee, retired last Friday, June 29, after more than 17 years at Ames Research Center.

Pendergraft, who came to work here as a machinist in Feb., 1945, served in the U. S. Army during World War I and spent eight months in France.

Prior to his retirement, Mr. Pendergraft was honored at a farewell party at the Moffett Field Chiefs' Club. More than 75 friends gathered to pay tribute to the retiree.

# Personnel-ly Speaking

## AMES MERIT PROMOTION PLAN

The discussion of the Ames Merit Promotion Plan continues this week with the "Evaluation of Qualifications."

## VII EVALUATION OF QUALIFICATIONS

The Personnel Division will prepare a file as described below summarizing the pertinent information on the entire group of eligibles.

A. Confidential questionnaires or vouchers will be obtained from supervisors of each eligible and from any other management official qualified to comment on the employee's performance and qualifications for the position in question. Ranking of the eligibles in accordance with the strength or quality of their experience and performance will be prepared in terms of excellent, very good, good, or fair.

B. Brief individual summaries of the candidates' experience, education, and training will be prepared, and a ranking thereof will be made in terms of excellent, very good, good, and fair.

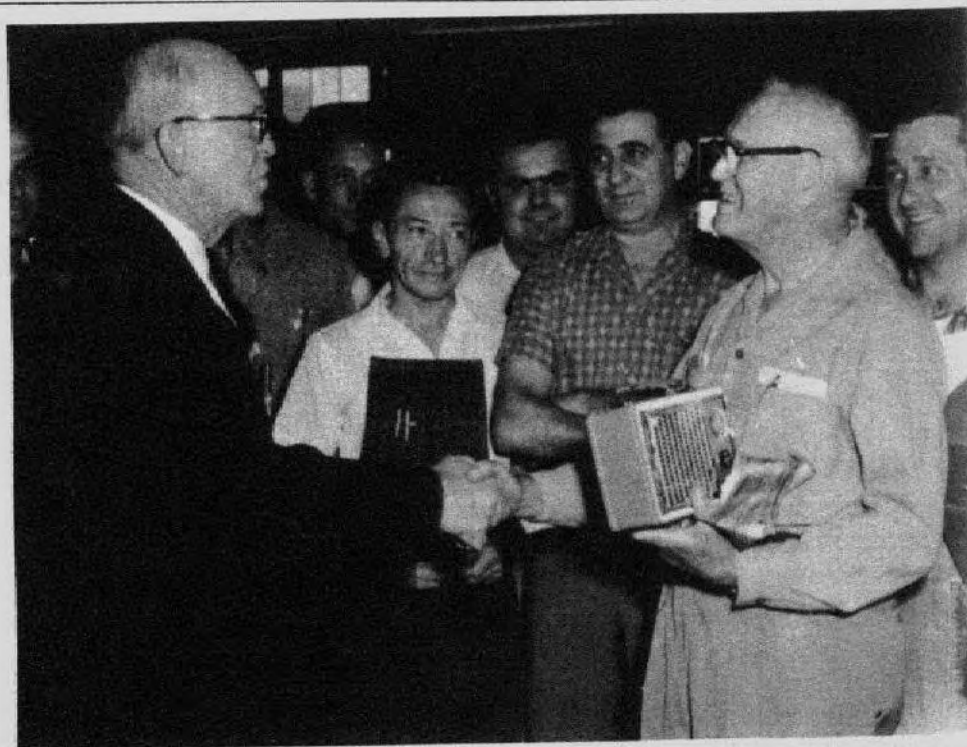
C. Entries will be made to show any incentive awards, special achievements, or commendations in the candidates' records.

D. Based on the information thus assembled, the eligibles will be evaluated, grouped, and listed alphabetically according to the following categories:

Best Qualified  
Well Qualified  
Qualified

The file thus prepared, with its evaluation and groupings, may be used as the basis for certifying eligibles to fill any subsequent vacancies with the same or substantially the same qualifications requirements for a period of six months after its preparation.

(Next issue: Part VIII, "Certification Selection" and Part IX, "Non-Selection Grievances")



Edward W. Betts (left), Chief of the Technical Services Division, is pictured presenting a transistor radio to Lowell Pendergraft prior to his retirement on June 29.

## NASA Life Insurance Premium Reduction

The Board of Governors of the NASA Employees Benefit Assoc. announced recently their decision to reduce the cost of premiums for the NASA group Life Insurance effective July 1, 1962.

The following chart indicates the current rates and the new rates which went into effect on July 1:

### SCHEDULE OF INSURANCE

Base Annual Salary		Employees' Quarterly Payment Rate	
		Old	New
Less than \$4,000		\$ 2.90	\$ 2.80
4,000 - 5,000		5.80	5.60
5,000 - 6,000		8.70	8.40
6,000 - 7,000		10.15	9.80
7,000 - 8,000		11.60	11.20
8,000 - 10,000		14.50	14.00
10,000 - 12,000		17.40	16.80
12,000 - 14,000		20.30	19.60
14,000 - and over		21.75	21.00

For information regarding enrollment under the NASA Home Life Insurance Plan call Joe Nicolassi, ext. 308.

## GOLF

.....by  
Ruth Richardson

Ames Golf Club day at Pleasant Hills Golf Club was Saturday, June 23. Some of us had our problems with the extremely narrow fairways, while others, like Carol Tinling, Ralph Maines, and Russ Fahey, could do no wrong.

First place winners in each flight were presented with certificates for merchandise, and all other winners received golf balls. Low net for the field went to Carol Tinling with a 63. Play for the day was a best ball twosome.

In the first flight the twosomes of Al Puccinelli and Ernie Ranstead, Otto Meckler and Harold Clements, and Jim Melan and Roy Griffin tied for first place.

In the second flight John Rakich and Ed Tischler were first, Ted Smith and John Van Etten, second, and the teams of Bruce Kelly and Vince Bellomo, and Jack Wyss and Gary Bowman tied for third.

Ralph Maines and Russ Fahey had hot rounds for the best ball of the day, coming in with a 56 net to take first place in the third flight. Carol Tinling and Bill Warren placed second, with Phil Johnson and Chuck Lavarney winning third.



Dr. Smith J. DeFrance, Director, presents Sustained Superior Performance Awards. Front row (l to r), Dr. DeFrance, Mrs. Dolores E. Johnson, Supervisory Math Aid (8-by-7-); Mrs. Myrno E. Schwarz, Accounting Technician (Accounting); Mrs. Edith W. Watson, Secretary to the Chief (Unitary); Mrs. Evelyn K. Olson, Math Aid (FSS); Mrs. Dorothea L. Wilkinson, Math Analyst (FSS); second row (l to r), Ray A. Torrey, Experimental Craftsman (EIB); Harold A. Mathews, Chief (Contract Administration); K. Dale Bonham (partially hidden), Foreman, Experimental Metal Fabricator (Struct Fab); Gustave A. Brunner, Supervisory Math Aid (FSS); Einar P. Ekholm, Metal Fabricator (3.5-Foot); Robert C. Richardson, Guard Captain (Security and Employee Relations); back row (l to r), John E. Neff, Experimental Craftsman (MIB); Samuel S. Yamada, Supervisory Math Aid (T/A, 12 Foot); Clarence A. Syvertson, Chief (3.5-Foot); Bradford H. Wick, Chief (Fluid Mechanics); Ferril R. Nickle, Budget Officer; Fred H. Swartz, Chief (Photo); and Richard C. Habenicht, Assistant Section Head (RFEE). Recipients not present for the ceremony were Miss Evelyn E. Oelschlager, Secretary to the Director; George E. Cooper, Chief (Operations); Dr. William A. Mersman, Chief (Electronic Machine Computing); and Harry J. DeVoto, Head (Tech Illustration).

## Recreation Roundup

.....by Vicki Malatesta

RESERVATIONS FOR THE ICE FOLLIES are coming in fast and furiously. If you want good seats, call Ron Kauffman, ext. 287, for reservations. Don't forget the date, Sunday, July 25, 5:30 p.m. Special rates are \$4.00 tickets for \$2.90 and \$3.50 tickets for \$2.40.

A BOAT TRIP TO CANDLESTICK PARK for the Giants-Dodgers baseball game is your August date with the Ames Recreation Committee. For reservations call Jim Patterson (EIB), ext. 565. For those who aren't too keen about baseball, here is an opportunity to try boating on the Bay. The Recreation Committee is planning a boat trip around San Francisco Bay in the near future if enough people are interested. We will make reservations on the Harbor Prince, the 3-decker which was commissioned last Friday (June 22) — it is a beauty!

MASTER POINT NIGHT for the Ames Bridge Club is Friday, July 6. And for those who don't play bridge, the Stamp and Coin Club meets the same night in the Ames Cafeteria. Both events offer good fellowship — and refreshments.

AMES BRIDGE CLUB WINNERS on Friday, June 22 were: Mr. and Mrs. Tom Snouse, first; Harry Bailey and Layton Yee, second; Mr. and Mrs. George Callas, third; and Mr. and Mrs. Arthur Kaskey, fourth.....June 29 winners were: Mrs. Dwight Moody and Mrs. Robert Spaulding, first; Alan Levin and Ron Kauffman, second; and Mr. and Mrs. Arthur Kaskey, third.

## Team Effort Moves Apollo Capsule to County Fair

It is OFF again — but not UP — for the NASA Apollo Capsule. Constructed at Ames to study crew environment and the arrangement of crew equipment, the wooden mockup of the three-man orbital capsule is on display at the Alameda County Fair, Pleasanton, for two weeks, from July 1 through July 15.

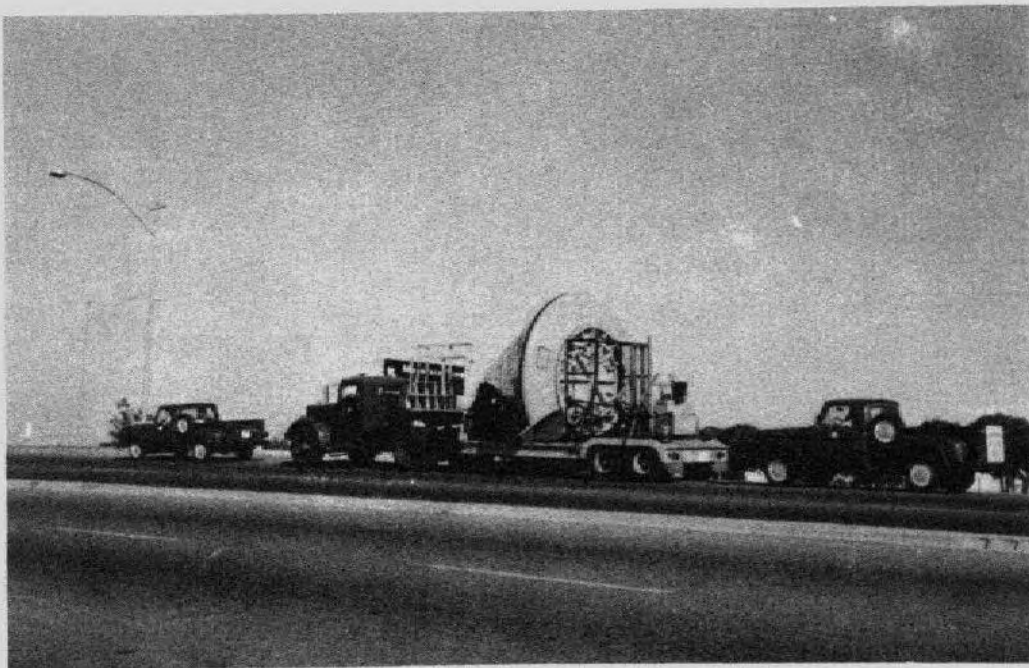
Moving the much-in-demand equipment from the Center is a team effort that includes state and local officials, as well as Ames personnel, according to Bill Rodgers, Transportation Branch. "Because of its size — 16 feet high and 12 feet wide — the California State High-

way Patrol limits its movement to certain specified routes," he explained, "and we added ten miles to the Pleasanton trip to meet the State Highway provisions." The axiom, "a straight line is the shortest distance . . .," has no consideration here.

The combined efforts of crane and fork lift operators, and two pilot cars driven by Leland Goularte, Structural Fabrication Branch, and Ralph Malloy, Transportation Branch, assured a safe "landing" for the working model of a space vehicle.



MEN AND MACHINES WORK TOGETHER TO LOAD THE APOLLO CAPSULE. Team effort is demonstrated here as Frank Solis (left) and Albert Perkins (right), Struct Fab, move with the big crane to ease the wooden mock-up of the three-man orbital capsule to the flat-bed truck.



THE NASA APOLLO CAPSULE IS CONVOYED DOWN THE HIGHWAY. Here, pilot cars guide Bill Rodgers, Transportation, as he cautiously moves the space vehicle into Bayshore traffic.

## Want Ads

For sale - Steky 16 mm camera, 20 exposures. Speed, 1/25, 1/50, 1/100, and B. Lens is Stekinar Anastigmat 1: 3.5 f-25 mm (coated). Telephoto lens 1:5.6 f-40mm #40 (coated), with developing tank and extra cartridge sink for flash. Call Don Moody, RE 6-5393.

For sale - Sheraton drop leaf mahogany table with pad, Matching buffet, Mahogany Duncan Phyfe drum top table, Formica kitchen table, 4 chairs. Call DA 5-0701.

For sale - GE electric stove, 30-inch, like new, \$125, 15-inch Karlson speaker and enclosure, \$25. Call C. Beck, 739-3323.

For sale - Kroehler sofa and chair, Nylon frieze, foam cushions. \$50. Call Jack Bonnell, YO 7-4286.

For sale - 1958-59 Tech Service Manual for Rambler American, \$3. New reinforced tire chains, Sears 7591, will fit 5.00x16 to 6.40x14 tires, \$7. Hallicrafter S38C radio, \$25. Floor and pole lamps, \$7, and \$10. Stella guitar with case, \$15. Call YO 7-0937.

For sale - National NC 125 receiver with manual and packing box, \$85., or trade for good 14-foot boat trailer. Call YO 7-7197.

For sale - 1956 Ford Fairlane Victoria (hard top), radio and heater. \$500. David Garner, 14304 Blossom Hill Road, Los Gatos.

For sale - 30-06 Remington semi-automatic rifle with scope and extras, \$150. 32-20 Smith and Wesson revolver with extras, \$50. Call CL 8-2758.

For sale - Two-bedroom home in Santa Clara. Call Ralph Sharp, 243-8811.

Wanted - Ames Research Scientist desires to lease 3-bedroom home on quiet street in Los Gatos, beginning August 1. Adults. Call Vernon Rogallo, YO 6-0186.

Wanted - To buy - Porta-crib in good condition. Call Bob Nysmith, AX 6-4093.

Wanted - Ride from San Bruno - Milbrae area, 8:00 to 4:30 shift. Call Janet Bioglotti, ext. 338.

Wanted - Ride from vicinity of Westgate Shopping Center. 8:00 to 4:30 shift. Call Dorothy Noyes, ext. 202.

Did you know that Ames Research Center regularly stocks over 100 materials which are flammable, explosive, caustic, acid, toxic, or poison? In addition, many more such materials are ordered and handled by research and support groups. Almost all such materials carry caution labels, by regulation, as they are received. The Supply Branch makes every effort to carry the "caution" label procedures to even small issues from stock.

The **Astrogram** Room 108  
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Phone 385

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AMES RESEARCH CENTER, MOFFETT FIELD, CALIFORNIA

VOLUME IV

JULY 19, 1962

NUMBER 19

### Dr. Eggers Keynote Speaker at Rocket Society Meeting



Dr. Albert J. Eggers, Jr., Chief of Vehicle Environment Division, will present a paper at the American Rocket Society's meeting on Lunar Missions in Cleveland, Ohio, today (July 19).

As keynote speaker for the Thursday session, Dr. Eggers chose as his subject "Some General Considerations of Manned Lunar Return Missions," from a paper by Dr. Eggers, Thomas J. Wong, Harold Hornby, and John Wyss.

The paper is a comparative study of a rather broad spectrum of problems which bear importantly on manned lunar return missions. A few of the more salient features of an extensive study are highlighted in this work.

Since joining the Ames staff in 1944 Dr. Eggers has specialized in hypersonic and space research. His recent work in the field of hypersonic and spacecraft design has produced novel aircraft and lifting re-entry vehicle concepts which have practical applications. The fundamental aerodynamic

(Continued on Page 4)

### Ames Personnel Launch High-Altitude Balloon in Cosmic Ray Research

The first of a series of four high-altitude balloons was launched by Center personnel from Goose Bay, Labrador on Saturday (July 14) to determine the effects of cosmic rays on monkeys and other organisms.

The flights will provide basic research on the radiation problems and will be applicable to manned space flight. Flying at an altitude of 131,000 feet, the first payload was exposed to approximately 50 per cent of the primary cosmic radiation effect that exists in deep space.

Conducted by NASA's Ames Research Center, and managed by Thomas M. Edwards of the Life Sciences Directorate, the research investigations are the most extensive of their type to date. The team of Ames personnel working with Mr. Edwards for the first launch were Dr. Webb Haymaker, Assistant Director for Life Sciences, Dr. Robert H. Schiffman (Env Bio Div), Dr. John H. Wolfe (Physics), Albert E. Clarke, Jr. (Mod Const), Joseph C. Benner (Elec Inst), and Emerson W. Shaw (Photo).

The 1929-mile flight across Canada began at 4:24 a.m. Labrador time and lasted 39 hours, 16 hours short of the anticipated 55-hour flight. High velocity winds and the decision to terminate the flight in daylight hours accounted for the shortened flight.

Released electronically by a tracking plane Sunday afternoon, the payload of three capsules parachuted to rugged and boggy terrain 43 miles north of Prince Albert in Saskatchewan Province.

Dr. Haymaker, who was in the tracking plane throughout the entire flight, proceeded from Prince Albert by helicopter to the capsule landing site. Upon opening the monkey capsule, he discovered that all life had perished due to a failure in the life support system.

The capsules were left in the recovery area until Tuesday morning awaiting favorable weather conditions to fly them to Edmonton, Alberta. Two capsules will be returned to Goose Bay and one will be brought back to Ames.

Each balloon carries a cluster of five

(Continued on Page 4)

### NASA Service Award Presentation Procedure Change is Announced

A change in the procedure for awarding service emblems was announced recently by NASA Headquarters.

Effective July 1, 1962, and quarterly thereafter (October, January, April and July), employees who complete 1, 10, and 15 years of creditable service will be presented with lapel emblems. Cer-

tificates of Service will also be given to employees with 10 and 15 years of service. These presentations will be made by the Division Chiefs. At the same time, employees who have completed 20, 30, and 40 years of service will be presented with a congratulatory letter informing them that appropriate lapel emblems and certificates will be presented to them at the annual awards ceremony in October of each year.

If there are any questions concerning this procedural change, contact Mrs. Thomsen, Personnel Division, ext. 411.



### SATURN EVENT

Saturn is to occult a star on Sunday evening, July 22. The star will disappear behind the outer ring of Saturn at 10:51 p.m. (PDT), and fully reappear at 1:19 a.m.

This is a fascinating event as you watch to see if you can observe the star between the planet itself and the rings, or to see if you can observe the star through the spaces in the ring system.

It takes a telescope with magnification (at least enough to see the rings) for this. We will be on the skyline on Highway 9 toward Big Basin for this event if you care to join us.

## Ames Airings

..... by Sharon Scharmen

Vacation days are here — just received a belated postcard from IRV ISRAEL (Property) and his wife, Sylvia, hand-carried from Miami, Florida. They vacationed in glamorous Miami Beach for a week then took a 7-day West Indies cruise with stops at Jamaica, Haiti, and Nassau. . . . KEITH Mc FARLAND (ISD) and his wife, Luella, just returned from an 8-week vacation in Europe. They bought a Volkswagen in Germany and had a great time touring the country. Keith reports it is a good place to go if you are economizing — beer is 10¢ a glass most every place they went. . . .

. . . . VERNON KIRK (ASB) and his wife left on July 14 aboard the S. S. Yarmouth for a cruise to the Seattle World's Fair. The 10-day trip includes a sightseeing tour of Vancouver, Canada, using the cruise ship as their headquarters. They expect to be back home by July 24. . . . The wedding of Phyllis Ames, daughter of Phillip Ames (FSS) and Mrs. Ames, and Clark White (SSFF) was an event of Saturday, July 7, at 2:00 p.m. in the Santa Clara Presbyterian Church. Best man was Dewey Havill (FSS), and Fred Boltz (FSS) was one of the ushers. After a honeymoon in Seattle the couple will make their home in Santa Clara. . . .

A recent wedding was that of HELEN MEDEIROS (40-by80-) and Walter W. Wardell, USN. They were married June 22 in the NAS Moffett Field Chapel.

## Personnel-ly Speaking

### AMES MERIT PROMOTION PLAN

The discussion of the Ames Merit Promotion Plan concludes this week with "Certification Selection" and "Non-Selection Grievances."

#### VIII CERTIFICATION SELECTION

A memorandum from the Personnel Officer to the appropriate Branch Chief or Division Chief will certify for consideration the Best Qualified eligibles. If there are less than five in the Best Qualified group, eligibles in the Well Qualified group will also be certified. If there are more than ten names in a group shown on a certificate, further selective ranking within the group will be noted. The Branch Chief or Division Chief will indicate his choice by endorsement on the certifying memorandum, stating briefly the reasons for his selection. Final selection is subject to approval of Ames Personnel Board. The Board is composed of the Director, associate Director, Assistant Director, and Center officials. Employees selected for promotion shall be released from their old positions as promptly as possible and without unnecessary delay.

#### IX NON-SELECTION GRIEVANCES

An employee who complains because he was not selected for a vacancy will be permitted to examine the promotion certificate and its selection endorsement and the qualifications standards used. He will be given appropriate oral explanation of the policy and procedures involved by a member of the Personnel Division. If he still believes that he has a grievance, he should present his grievance through the channels and in the manner prescribed in the NASA Management Manual for grievances generally.

## Recreation Roundup

..... by Vicki Malatesta

CHORAL GROUP REHEARSALS are every Tuesday noon, 12:00 to 12:30, in the basement of the Instrument Research Laboratory. Membership is open to all Ames employees with or without formal voice training.

AMES BRIDGE CLUB WINNERS OF THE MONTHLY MASTER POINT EVENT on July 6 were: George Callas and Lu Cicolani, first; Mr. and Mrs. Howard Matthews, second; Alan Levin and Ron Kauffman, third; and Mrs. Grace Dickson and Mrs. Janet Bedella, fourth. . . . Winners on Friday, July 13 were: Lu Cicolani and George Callas, first; Alan Levin and Ron Kauffman, second; and Mr. and Mrs. Arthur Kaskey, third.

After the ceremony they took a trip to Lake Tahoe, Reno, and Yosemite. Walter will be on leave here for about nine weeks, then he will return to duty in Iceland until May 1963. He retires then from the U. S. Navy with 20 years of service. . . The baby parade—ROBERT E. MOBLEY (Res Fac Eng) and his wife, Joy, are the proud parents of a daughter, Cheryl Ann, born June 14. Weight, 6 lbs., 15 oz. . . . HENRY J. PFISTER and his wife proudly announce the birth of a baby girl, Virginia Ann, on June 27 at 10:29 a.m. Weight, 7 lbs., 9 1/2 oz., and 19 inches long. . . . BOB GEORGE (Struct Dynam) and his

wife, became the proud parents of a daughter, Deborah Kay, born at El Camino Hospital at 1:30 a.m. on Sunday, July 1. Weight, 7 lbs., 6 and 1/2 oz. . . .

### The Astrogram

Room 108  
Administration Building  
Phone 385

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## Manley Hood Addresses Science Workshop

Manley J. Hood, Technical Assistant to the Director, presented a paper before a group of Los Angeles County educators at their Science Workshop in Alhambra, California, on Tuesday, July 10.

Mr. Hood chose as his subject "What Are We Learning From Space?" The paper discussed some of NASA's scientific accomplishments and what is being learned from space activities.

The science workshop for teachers, administrators, and curriculum leaders afforded the educators an opportunity to learn of recent scientific development in space exploration. Mr. Hood explained, "I participated in a program in which NASA is keenly interested—selling scientific careers to young students through their teachers."

During the early part of his 33 years with NASA and its predecessor organization, Mr. Hood specialized in the field of wind tunnel design and research. He was one of the original group of Langley employees sent to found Ames Laboratory in 1940. His contributions to major aeronautical research projects have been many and he has written a number of technical reports.



DOWN THE LAST MILE... goes Dan Wentz, Center PIO, as he runs the gauntlet to his farewell luncheon on July 2. Known for his cheery greetings, knowledge in depth of the Center, extemporaneous speaking ability, and widespread friendships, Dan transferred to the Langley Research Center.

## Ames Pilot Flies Operational Vertical Lift Jet

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FRED DRINKWATER DEMONSTRATES VTOL PLANE IN HOVERING FLIGHT.

Fred J. Drinkwater, III, Ames aerospace engineer and pilot, returned recently from England where he flew and evaluated British-developed aircraft, including the P-1127, vertical take-off and landing airplane (VTOL).

For Mr. Drinkwater, the opportunity to fly the only operational VTOL airplane in the world was the culmination of long hours of flight tests and simulation studies with a similar VTOL test vehicle.

In discussing the P-1127 Mr. Drinkwater said, "It is a fantastic airplane, further advanced and developed than people realize. We flew it right from the grass—an unprepared surface, and the natural environment of the VTOL airplane." He went on to explain, "This is a prototype of an operational strike fighter. The P-1127 is the first one to have the capability of performing useful military missions. Such use would, in fact, let us know how best to employ VTOL techniques."

Experiments at Ames with the Bell X-14 test vehicle started the vectored thrust concept which provides both vertical lift for hovering, and propulsion for high pressurized flight speeds. The success of this operation and other NASA-conducted research programs, both at Ames and Langley Research Center, encouraged the British to continue their development of VTOL aircraft.

The P-1127 was originated by Britain's Hawker Siddeley Aviation Company and is now being developed under a

cost-sharing agreement between Britain, the United States and West Germany.



In addition to the P-1127, Mr. Drinkwater flew the HP-115, 76° delta wing research airplane, the Short SC-1, jet lift variable stability research airplane (V/STOL), and a Vicker's Varsity which was equipped with the Smith automatic landing system. According to Mr. Drinkwater "it flew great—a completely automatic landing all the way to touchdown, even in heavy cross winds."

## NASA Regulation Available

The supply of the agency-wide regulation "NASA Employee-Management Cooperation Program" referred to in the Staff Memo dated June 28, has arrived and may be obtained from John Van Etten, Security and Employee Relations Officer, Administration Building.

## Ollie Leonard to Retire July 31



Ollie C. Leonard, Fluid Mechanics Branch, will retire July 31, after more than 15 years at Ames Research Center.

The 70-year-old veteran began his career here in 1945, when he worked as a mechanic for the Pittsburgh - Des Moines Steel Company during the construction of the 12-Foot Pressure Wind Tunnel. Two years later, when the job was finished, he was asked to work at Ames. In February 1947, he went to work for Bob Crane, and, according to Ollie, "I wish I'd come a lot sooner."

A native of Des Moines, Iowa, Ollie grew up in the era that produced the first automobile mechanics. He worked on

his first automobile in 1912, and it was an entirely new field for any young man. Then the Des Moines Speedway was built and the glamour of the racing automobile lured the mechanics. Ollie recalled a day in 1914, "The old board speedway looked good and smooth, Eddie Rick-enbacker was behind the wheel of a new Duesenberg, and I was the passenger. I had the fastest ride of my life, over 100 miles an hour, and it nearly shook me to pieces! Quite a speed ride for those days — these days, too."

During World War I, he joined the U.S. Army and was assigned to the repair unit of the first organized Motor Transportation Corps in France. He served nearly two years overseas and his unit "kept 'em rolling." Even General Pershing's car, complete with steel-studded tires, was brought to Ollie for overhaul.

After the war he returned to Des Moines and his job with the Hupmobile Automobile Company. In February 1922, he moved to California and has made his home in San Jose ever since.

His retirement plans include a trip or two, some hunting and fishing, and keeping track of his Navy son, his wife, and their three daughters, who returned on Monday (July 16) after three years of duty in Japan.

(A farewell party for Ollie will be held at the Moffett Field Chiefs' Club on Monday, July 23, at 7:00 p.m. An invitation is extended to his many friends who may wish to attend. Reservations may be made until noon, July 20. Call or see George Barker, Fluid Mechanics Branch, ext. 202.)

### BALLOON FLIGHT (Continued from Page 1)

36-inch in diameter capsules, except the first flight which carried three capsules. One capsule of each flight contains two rhesus monkeys and four hamsters. The other four capsules carry instrumentation to record the in-flight effects on the organisms, as well as other micro-biology and radiation experiments.

Remaining flights are expected to take place at weekly intervals. The flights employ balloons measuring 300 feet in diameter with a capacity of nine million cubic feet of helium, and stand 380 feet tall, the largest ever used for such work.

At the Center, Donald E. Warner, Technical Assistant to the Assistant Director for Life Science, monitored pre-launch and flight activities for the first test.

## Civil Service Inspection Team Visiting Ames

Representatives from the U. S. Civil Service Commission, San Francisco Region, began a 3-week inspection visit here on July 16. The Commission inspectors will be available to receive pertinent information from both individual employees and employee representatives July 23, 24, and 25. For an appointment call Betty Thomsen, Personnel Division, ext. 411.

## Want Ads

For sale - Two Colt single action revolvers, .38 Spl. and .45 automatic. Good condition. Belts, holsters and ammo included. \$70 each or will trade for two CB units. Call J. Meek, EL 4-4390.

For sale - Two-wheel garden tractor with 3 attachments. Runs well. \$75. Call Bill Angwin, ES 7-1604.

For sale - Set of the Harvard Classics including bookcase. Excellent condition. \$100. Call Glen Weidlich, YO 7-1980.

For sale - Eureka upright vacuum cleaner, full set of attachments, zipper throw-away dust bag. \$25. Call Mary Karabas, AN 9-5242.

For sale - Seattle World's Fair Ticket Books. \$10.00 value will sell for \$6.00 each. Call Robert Hughes, CH 3-1691.

For sale - Airequip slide trays for Argus and Kodak slide projectors. Good condition. 80 cents each. Call Robert Hughes, CH 3-1691.

For sale - 3-bedroom, 2-bath home, 20 x 40 ft. granite swimming pool, filter, large patio and cover, children's play yard, oversized lot, well landscaped, all electric kitchen, barbecue. \$21,000. \$2000 down to new FHA loan on \$19,500. 10872 West Estates Drive, Cupertino. Call AL 2-4830.

For sale - 3-bedroom, 2-bath home. Separate step-down family room, 2 separate fireplaces, G.E. electric kitchen with dishwasher. House is 3 years old. \$2700 down to large 4 3/4 loan. Call owner, Don Moody, AL 3-0291.

Wanted - Used cradle for baby. Write Ed Crimmins, 761 Hope Street, Mountain View.

Wanted - Ride or riders from Fremont area to Ames. 7:30 to 4:00 shift. Call Jean Cook, ext. 351, or evenings, SY 3-2389.

Wanted - To join or form ride group from West Menlo Park. 8:00 to 4:30 shift. Call George Kaattari, ext. 202.

For rent - Furnished room (two) in private home in Mountain View. Gentlemen preferred. Call YO 7-3156.

Wanted - To share apartment. New Ames employee, male, in middle 20's, arriving end of July and desires to share apartment. Call 241-5578 after 5:30 p.m.

Free - Or best offer. Puppies, keeshound and caskanova. If interested call Bill Angwin, ES 7-1604.

For rent - Beach house, 3 bedrooms, 1/2 block from Rio Delmar Beach. Call Mr. Cooper, UN 7-3355.

### DR. EGGERS (Continued from Page 1)

principles on which the B-70 Mach bomber is based were conceived by Dr. Eggers and worked out in detail by the research scientists under his leadership. He has made basic contributions to hypersonic flow theory and to the understanding of spacecraft motion and heating during atmosphere entry. He has also conceived and developed specialized research equipment, including hypersonic wind tunnels and an Atmosphere Entry Simulator.

# NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

# The

# Astrogram

## AMES RESEARCH CENTER, MOFFETT FIELD, CALIFORNIA

VOLUME IV

AUGUST 2, 1962

NUMBER 21

### Ronald Gerdes Participates In Apollo Lunar Studies

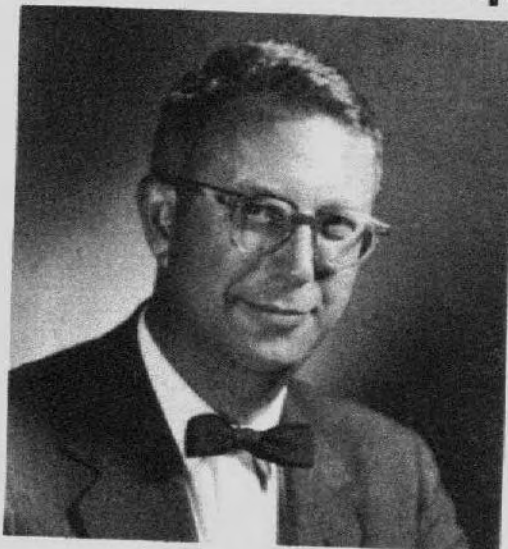
Ronald M. Gerdes, Ames aerospace engineer and pilot, recently participated in Apollo lunar landing simulation studies at the Columbus (Ohio) Division of North American Aviation, Inc. (NAA). In addition, he was afforded the opportunity to fly the dynamic flight simulator and discussed some of the problems associated with all-weather low-level radar navigation.

The objectives of the simulation (modified main-stream Apollo) were to determine the suitability of a modified pilot's position and the arrangement for enabling the pilot to perform a soft landing initiated from a 1000-foot hover position. Of particular interest were such aspects as descending straight down versus traversing "back" one mile to a previously picked spot, value of external display, minimum instrumentation for performing satisfactory landing, optimum control modes, and actuator characteristics.

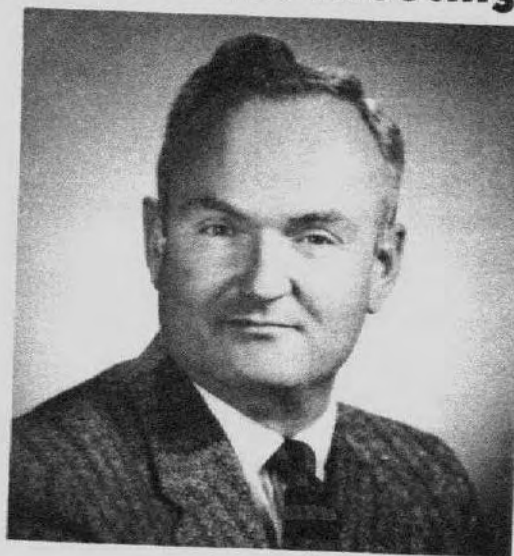
The fixed-base cockpit of the simulator represented the landing position station. The lunar surface was viewed through a typical Apollo window, using a closed-circuit TV presentation. And the pilot's task was to land at a designated spot on the lunar surface as quickly and accurately as possible. In describing this simulated landing Ronald Gerdes said, "It was somewhat surprising to me that the landing was similar to landing a helicopter on Earth. And of special importance, the landing spot had to be kept in view at all times."

According to Mr. Gerdes, the observations resulting from his simulation studies pointed toward the feasibility of a lunar excursion type of vehicle as proposed by NASA for the Apollo lunar landing missions.

### Ames Scientists to Present Paper at Institute of Aerospace Sciences Meeting



Charles W. Harper



Melvin Sadoff

A paper entitled "Critical Review of Piloted Flight Simulator Research" is to be presented by Melvin Sadoff and Charles W. Harper, Ames scientists, before the Seattle Section Meeting of the Institute of Aerospace Sciences on August 10, at Fort Lawton, Washington.

The presentation will examine the results of a number of piloted simulator investigations in order to assess the utility of simulators for defining and solving pilot-vehicle integration and control problems of interest for various types of aircraft and spacecraft. Comparative appraisals, obtained in various ground-based simulators and in flight, are used to indicate the degrees of simulator sophistication required; that is, the visual and motion information cues needed for routine handling-qualities, evaluations, and specific control problem research on conventional and advanced vehicles.

Mr. Sadoff, Research Scientist of the

Flight and Systems Simulation Branch, has been associated with the NASA and its predecessor agency, NACA, since 1943. He has specialized in research on aircraft loads, stability and control, and most recently in the problems of human pilot response. The results of his work appear in some 20 technical publications of which he is author or co-author.

Mr. Harper, Chief of the Full-Scale and Systems Research Division, has been associated with NASA and its predecessor organization since 1941.

Mr. Harper is an internationally renowned research administrator whose areas of activity currently include advanced flight simulation of both aeronautical and space vehicles, stabilization and control systems for satellites, guidance and navigation research for lunar flight, research on supersonic transport problems, and research in the V/STOL aircraft field. Mr. Harper has been in his present position since 1959.

## RULES OF CONDUCT FOR NASA EMPLOYEES

The New Moon, with its muted brilliance, presents the most pleasant lunar observing. Objects on the terminator stand out in bold relief and seem in 3-D. The "old moon" can be seen in the "new moon's arms" by light reflected from the Earth. And, if there is a brilliant planet near the new moon in the evening twilight, we get an "out-of-this-world" feeling as we look.

Look especially for the small Maria (Seas), Mare Spumans, the Sea of Foam, the somewhat ill-defined sea to the west of Mare Foecunditatus; Mare Undarum, the Sea of Waves, the small dark area west of Firmicus and Apollonius; and Mare Anguis, the Serpent Sea, a long valley-like depression close to Mare

These NASA Management Manual Instructions have been incorporated into the Ames Procedure Manual as Section 220, Conflict of interest instructions. Additional copies of these instructions may be obtained from the Employee Relations Office, extension 336, Room 114, Administration Building.

We will discuss Mare Australe, Mare Smytii, Mare Marginis and Mare Humboldtianum —the areas beyond the usual visual 50 percent of the surface that are exposed under various conditions — later when we talk about libration.

..... by Ruth Richardson

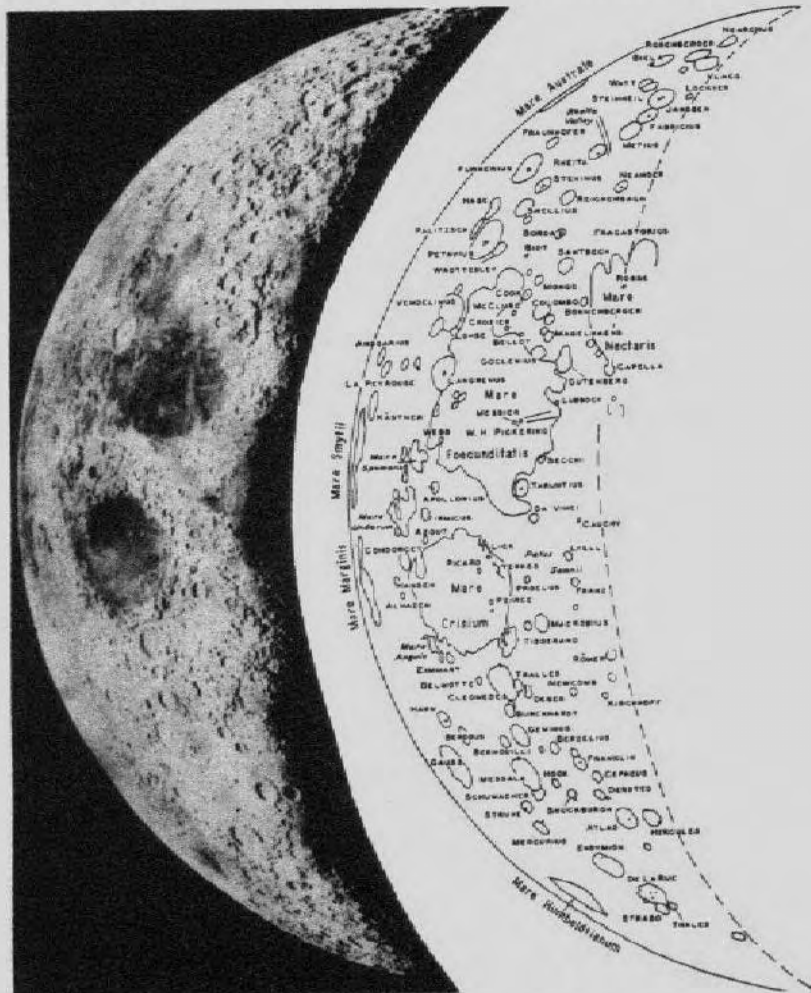
Pajaro Valley Country Club at Watsonville was the site of the July tournament for members of the Ames Golf Club. Play for the day was a point par tournament.

First flight honors went to "Debby" De Boise, with Otto Meckler, second, Howard Matthews, third, Bruce Tinsling, fourth, Al Petretti, fifth, and Al Puccinelli, sixth.

Joe Quartuccio took first place in the second flight, Carol Tinling was second, Herb Pankratz and Phil Johnston tied for third and fourth places, and Bruce Kelly and Gary Bowman tied for fifth and sixth places.

In the hole-in-one contest Frank Lazzeroni was nearest the pin.

The next tournament will be played at Hillview Golf Club on August 18, with tee off time starting at 7:00 a.m. This will be a Flag Tournament in three flights—should be fun for everyone.



THE WAXING CRESCENT MOON (Photo may be used as reference for future Astrogram articles by The Astroventurer)

## The Astrogram

Room 108  
Administration Building  
Phone 385

The Astrogram is an official publication of the Ames Research Center, NASA, Moffett Field, California, and is published bi-weekly in the interest of Ames employees.

Managing Editor . . . . Brad Wilson  
Editor . . . . . Dot Evans  
Reporters . . . . . NASA Employees

Deadline for contributions:  
Thursday between publication dates

## Ralph Sutton Member of Recent Search Party

Ralph E. Sutton (Elec Mech Comp), a member of the local Loma Prieta rock climbers, was one of 30 members of the Sierra Club called on recently to join an organized search in Kings Canyon for a missing Bay Area youth.

Flown into Simpson Meadows by military helicopter, the group combined their mountaineering and rock climbing talents to make a thorough search of the area. They remained in the search area until hope for the boy vanished (four days), then helicopters returned to fly them back to their home stations.

The Sierra Club, a dedicated group of forest conservationists, are taught the art of technical rock climbing as well as safe mountaineering procedures. Training sessions are supplemented by field trips in the local area and keep the members always prepared for an official search.



A MEMENTO OF HAPPY DAYS AT AMES . . . was presented to Mrs. Violet A. Anderson (Airc Insp) on the occasion of her retirement on July 13. The model of the FAU-3 is a reminder of the early test-flights of that airplane at Ames, and the thousands of replacement parts that were shipped here with it. As Mrs. Anderson identified parts and set up a comprehensive supply system her interest in the plane grew and her one wish was to have a model. Here, Raymond E. Braig, Assistant Chief of Technical Services Division, grants the wish at a farewell ceremony.

## Ames Airings

by Sharon Scharmen

Back from Tahiti, Moorea, and Bora Bora is HELEND AVIES (Personnel Officer) who spent four wonderful weeks in these dream islands. She was entranced by (among other things) the Tahitian music — she brought back some Tahitian records which she hopes her neighbors are enjoying as much as she is. . . . If you happen to see ELSIE BAXTER (Fiscal) walking around with a dazed expression on her face, it's because she has just purchased a new 1962 Thunderbird — white with gorgeous turquoise upholstery. Elsie is thrilled beyond words with this dream come true. . . . Mt. Lassen was the vacation spot for MILDRED & BILL WARREN (Pers. and Sheetmetal) a couple of weeks ago. They pitched a tent and behaved like weathered outdoorsmen enjoying every beautiful minute of that country. Having spent only one week camping out, they have about decided to return and spend more time in the wide open spaces. . . . Two o'clock feedings are in order for the following families: HENRY HANSER (Res Equip Eng) and wife have a new baby girl born on July 20 at Sequoia Hospital. Karen Louise weighed a dainty 7 lbs., 10 and 1/4 ozs. . . . CLYDE ALLEN (12-Foot) and his wife, Dorothy, have adopted a baby girl who was born on June 6. Paula Joann weighed 7 lbs., 14 ozs. and

## Recreation Roundup

by Vicki Malatesta

TICKETS ARE SOLD OUT for the Giants-Dodgers baseball game on Sunday, August 12. For those who are taking the boat trip to Candlestick Park, the boat will leave the Redwood City pier at 10:30 a.m. — sharp! All-day parking has been arranged for your cars. . . . If you are interested in more trips of this type contact Jim Patterson (EIB), ext. 565.

AMES BRIDGE CLUB WINNERS on Friday, July 20 were: Mrs. Arthur J. Kaskey and Mrs. Fay Hickok tied with Alan Levin and Ron Kauffman for first and second; Mr. and Mrs. John Anderholm, third.

CHORAL GROUP REHEARSALS ARE EVERY TUESDAY NOON, 12:00 to 12:30, in the basement of the Instrument Research Laboratory.

### A Reminder . . .

Xerox reproduction equipment is available in the 3.5-Foot Building, Room 209, as well as in the Administration Building. Persons located closer to the 3.5-Foot Building may find it a definite advantage to use the Xerox equipment there. Contact Walter Krumm, Room 211, or the receptionist to obtain a key to Room 209.

was 21 inches long. Clyde took two weeks annual leave for the purpose of loving and spoiling her and did a very thorough job of it. Clyde's first comment on returning to work was, "Why didn't you tell me the 2:00 a.m. feeding meant from 2 till 4?"

### Moon Flight Control Center at Houston

NASA Administrator James E. Webb announced recently that the control center for manned flights to the moon will be located at the NASA Manned Spacecraft Center in Houston, Texas.

The \$30 million Mission Control Center will be used to control Gemini and Apollo operations just as the Mercury Control Center, Cape Canaveral, Florida is the nerve center for Project Mercury flights.

The Center, including its computer complex, communications center, flight simulation facility and flight operations displays, is planned to be operational in 1964 for Gemini rendezvous flights.

## NASA Selects Saturn Launch Complex Design

The Advanced Saturn launch vehicle — completely erected and checked out — will be carried vertically to its launch pad by a 2500-ton crawler vehicle, it was announced recently by NASA Headquarters.

The decision for the crawler method of transporting the 350-foot Saturn C-5's was made by D. Brainerd Holmes, NASA Director of Manned Space Flight, on the recommendation of Dr. Kurt H. Debus, Director of NASA's Launch Operations Center.

The 7.5 million pound thrust Saturn C-5 is assigned the manned lunar landing mission using lunar orbit rendezvous. Launch site for the C-5's will be Complex 39 in the new NASA area northwest of Cape Canaveral, Fla. The area will cover some 30,000 acres including safety zones.

A major element of Complex 39 is a vertical assembly building with bays for the assembly and check out of six C-5's at once. The building — 48 stories high, more than two city blocks long and 230 feet deep — will completely enclose the rockets during prelaunch activity. It will be 150 feet higher than Florida's tallest building, the Dade County Court-

## Seth Anderson Judges World Record High Jump

The recent United States-Russian track meet at Stanford Stadium produced world records as predicted. Of special note was the record set by Soviet high jumper Valeriy Brumel when he edged over the cross bar at 7 feet 5 inches, adding a half inch to his own record.

On hand to make the official measurements of this world record jump was Seth Anderson (FSS), judge of high jump activities at the meet. Seth has volunteered his services as assistant gymnastics coach at Stanford University for some 15 years and he is a familiar figure at the AAU meets in the Bay Area.

house in Miami.

Specially constructed roadways for the crawler will join forward pads and the assembly building in the rear.

The crawler is 130 feet long and 115 feet wide and will move on eight tank-type treads. It will be driven by electric motors powered by diesel-driven generators.

Work on the complex will begin next month and the first launch is planned for 1965.



TWO NEW STARS... in the Ames Bridge Club are Lu Cicolani (left) and George Callas (right), both of Guidance and Control Branch. Here, they are giving opponent Jessica Gaspar (Struct Dynam) and partner some stiff competition. The two new champs have improved their game so much during the last few weeks that they are hard to beat, and they can testify that playing duplicate bridge really improves one's game. They walked away with the masterpoints on July 6 with a whopping score and beat all competition the next week with a 71.4 percent game — and that is really good! George and Lu will take on all challengers at the Friday evening games.

## Want Ads

For sale - Kitchen table with four chairs, stroller, and boy's bedroom set with 4-drawer chest. Make offer. Call ES 7-5539.

For sale - Sheraton drop leaf mahogany table with pad, and matching buffet. Duncan Phyfe drum top table in mahogany. Formica kitchen table with four chairs. Call Sybil Heaton, DA 5-0701.

For sale - Northwind Evaporative Car Cooler, 1960 model, 12 volt, good condition. List price, \$49.50, for sale at \$20. Call H. Turner, YO 7-6188.

For sale - Occidental gas range, 4 burners, large oven, infra-red broiler, excellent condition. Call Edie Watson, 948-5250.

For sale - 1956 Plymouth Savoy, 4-door, 6-cylinder, stick shift. Exceptional condition, excellent tires, \$395 cash. Call AM 2-0178 after 5:00 p.m., all day Sat. and Sun.

For sale - 1951 Buick Special Hardtop. Good transportation. \$95. Call John Sisk, PR 5-2809.

For sale - 1960 Chevrolet V 8, beige, 4-door Bel-Air, new WSW, Blue Book price, low mileage, excellent condition. Call Joanne Phifer, 739-3344.

For sale - 1959 Cadillac Sedan De Ville. Call ES 7-5539.

For sale - 1950 Chevrolet Powerglide. Good tires, new brakes, new battery, R & H working. Plenty of good transportation left. \$225. Call Mike Bader, 968-7337, evening/week ends.

For sale - Harri Tear-Drop Trailer, new tires, \$100. Call M.N. Thompson, YO 7-5840.

For sale - 1959 Fiat Bianchini. 40 miles/gallon. New top. Call DA 3-3648.

For sale - Leica M 3, like new, with 35, 50 and 135 mm lenses, coupled light meter, flash and other accessories, \$680 or offer, Call Mike Bader, YO 8-7337, evening/week ends.

For rent - Two-bedroom cabin, Bijou Lake Tahoe, 2 miles from Stateline. Available for 1 week August 4 to 11 due to emergency cancellation. \$65 per week. Call Joe Quartuccio, AN 4-4889.

Found - Eyeglass case inscribed, "Donald A. McLachlan, O.D., 2 Third Ave., San Mateo." Call E. Turenchak, CH 3-9279.

## Take Part - Ames Bond Drive!



## NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

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# Astrogram

### AMES RESEARCH CENTER, MOFFETT FIELD, CALIFORNIA

VOLUME IV

AUGUST 16, 1962

NUMBER 22

### Johnson Appointed Attorney for Ames

Hirsch J. Johnson has been appointed Attorney for Ames Research Center, Dr. Smith J. DeFrance, Director, announced last Thursday (August 9).

This position was recently established at Ames to facilitate the handling of legal arrangements for the Center's rapidly expanding activities. Johnson will advise the Director and his staff on contract negotiations, procurement, and other legal matters.

Mr. Johnson, a native of San Antonio, Texas, is the former legal advisor for the National Bureau of Standards in Washington, D. C. He has also served in the Office of the Chief Counsel for the Department of Internal Revenue, and as Assistant Attorney General for the State of Texas.

He was educated in the San Antonio public schools and at the University of Texas. He is married to the former Helen Randle of Monroe, Louisiana, and they have four children, Tom, 20, Mary Ellen, 18, Margaret, 13, and Carl, 8.

### Dr. Haymaker Attends International Congress

Dr. Webb E. Haymaker, Assistant Director for Life Sciences, represented the Center recently at a meeting of the Second International Congress of Radiation Research at Harrogate, England.

Dr. Haymaker presented a paper entitled "Degeneration and Regeneration of Myelinated Fibers in the Cerebral and Cerebellar Cortex Following Damage From Ionizing Particle Radiation." He also participated in a special discussion on proton and other high-energy particles.

(Continued on Page 2)

### Student Summer Employees and Shell Merit Fellows Tour Center Facilities

Ames student summer employees joined with Shell Merit Fellows from Stanford University recently for an orientation program and tour of Ames facilities.

Dr. Smith J. DeFrance, Director, welcomed the group and expressed NASA's interest in encouraging scientific careers for young students through their teachers, and reaffirmed the Administration's interest in assuring that the summer employees learn as much as possible about our Government,

NASA, and the mission of Ames Research Center.

The annual summer employee program at Ames, like other agencies, affords the student-employee a better understanding of Federal service and the many advantages and benefits that it offers. Ames is heavily involved in the space program, and in addition, aeronautics. Career opportunities here are many and varied, and work environments are highly suited to scientific

(Continued on Page 4)

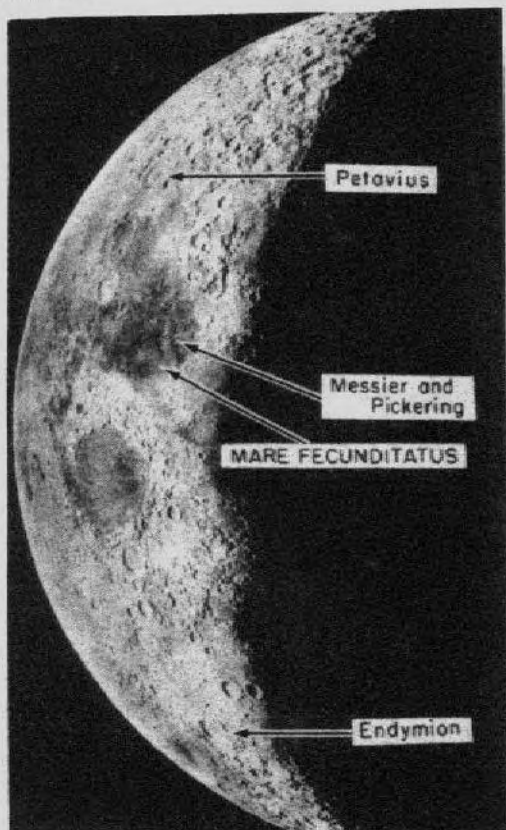


Three residents of Hawaii held an impromptu reunion at Ames recently when student summer employees joined with Shell Merit Fellows for an orientation and tour. Mrs. Iris Fukui of Honolulu, a teacher at Kalani High School, and Dennis S. Miyoshi (left) of Lihue, Kauai, a summer employee at Ames, met on the tour. In 1956, Mrs. Fukui coached Mr. Miyoshi for the state-wide finals of a speech contest, and had not seen him since that time. Lloyd Morinaga (right) of Hilo, also a summer employee at Ames, explains the function of the 9-by-7-Foot Supersonic Wind Tunnel.

## Astroventuring... with walt krumm

### THE MOON

PETAVIUS, mentioned briefly in the first of this series, is one of the finest objects on the moon. It measures 100 miles from north to south. Its wall is divided by many valleys. In the center of its vast plain rises a mountain 5000 feet high. A straight line radiates from the base of the mountain and extends south-east to the wall of the crater. This line is actually a great cleft, and may be seen with a small telescope. The formation of these clefts is analogous to our western canyons.



MARE FECUNDITATUS, or Sea of Plenty, diamond-shaped and south of Mare Crisium, is now visible. It is 640 miles from north to south and 415 miles from east to west, a total of 160,000 sq. miles. At Vendelinus it is only 132 miles wide with peaks on either side to 5400 and 3300 feet. Due to the rapid curvature of the globe, these peaks would not be in sight of each other. (The horizon is about six miles away from a person standing at sea level on earth. On the moon, if one could find a flat place, the horizon would be one and one half miles away.)

Look for the two small craters, MESSIER and PICKERING on Mare Fecunditatus. Two slightly diverging streaks run east from these that look like a comet tail. If you look at the streaks under

## Personnel-ly Speaking

### THE U. S. CIVIL SERVICE RETIREMENT SYSTEM

(This is the first of a series of articles on the U. S. Civil Service Retirement System)

The Federal Government's retirement system for its employees is one of the best features of its modern employment system. A modest deduction from each paycheck gives you protection in case of disability, will provide for your family in case of death, and will pay you an annuity in later years. You should acquaint yourself with what you are entitled to as a member of the retirement system.

Your retirement deductions are 6 1/2 percent of your salary, and each agency pays into the retirement fund an amount equal to each employee's deductions. This money, together with the interest it earns, is used to help finance the retirement system.

### WHEN YOU MAY RETIRE

You MUST retire at age 70 after 15 or more years of service.

You MAY retire at the following ages with at least the amount of Federal Service shown:

Earliest age	Years of service	Remarks
62	5	
60	30	
55	30	Annuity reduced for age.
50	20	Must be involuntarily separated; annuity reduced if under age 60.
any	25	Must be involuntarily separated; annuity reduced if under age 60.
any	5	Must be totally disabled

Most military service counts towards retirement, but in all cases an employee must have had at least 5 years of civilian service in order to be eligible for retirement.

(The next issue will continue with "How Annuities Are Computed.")

the proper lighting it appears as though a mass hit Messier and came out at the crater Pickering, splattering along the surface to the east.

ENDYMION(Mythical), a great crater, 78 miles in diameter on the northwest limb of the moon.

DR. HAYMAKER  
(Continued from Page 1)

Dr. Haymaker's contributions in the field of neuropathology have long been recognized in world medical circles. The internationally known neuropathologist is an authority in the fields of ultrasonic and ionizing radiation effects, decompression sickness, heat stroke, hypoxemia (deficient oxygenation of the blood) and neuroanatomy.

**CORRECTION:** North is to the top as the moon is viewed by the naked eye, but west is to the right. In a telescope, south is up and east is to the right. To make sure of yourself, Mare Crisium is on the western side of the moon, where the sun comes up, and Plato is on the north. The most rugged area of the moon is to the south.

The **Astrogram** Room 108  
Administration Building  
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## Dr. Smedal to Present Paper at Photography-in-Science Conference

Dr. Harald A. Smedal, Chief of Human Performance Requirements Branch, is to present a paper at the Photography-in-Science Conference on August 23, at the Jack Tar Hotel in San Francisco.

The paper, entitled "The Use of Photography in Studying Acceleration on Test Pilots," describes the method of monitoring and recording cellular disturbances in the retina of the eye under extreme dynamic forces.

"In an earlier experiment," Dr. Smedal explained, "the reflection of a placido disc on the cornea was photographed continuously under acceleration. Careful examination of the films revealed no distortion of the placido disc reflection due to corneal deformation, although at accelerations of more than 6g, intermittent watering occurred which resulted in marked distortion of the placido disc reflections. This watering, of course, leads to blurred vision for the pilot."

Sponsored by the Biological Photographic Association and the University Extension of the University of California, Berkeley, the conference is designed for the professional scientific photographer and for the scientist or technician who uses photography as a tool in research or industry.

The ever-increasing complexity of scientific research has brought about a need for an accurate means of data gathering and documentation. In meeting this need photography has become, in a sense, the eyes of science.

## Keep Up-to-date — Read "Current News"

CURRENT NEWS, a compilation of news items concerning the NASA mission, is prepared and distributed by NASA Headquarters each day. The material appears in daily papers throughout the country and is timely and informative. Personnel interested in keeping up-to-date with national views on space activities around the country will find copies of Current News on file in the Library and the Public Information Office.

## Recreation Roundup

..... by Vicki Malatesta

BASEBALL TICKETS ARE AVAILABLE NOW for the San Francisco-Chicago game at Candlestick Park on Sunday, September 9, at 1:00 p.m. The price is \$4.40 per person and includes round trip transportation and a reserved seat at the game. Deadline for reservations is September 1. Call Jim Patterson, ext. 565, for details and reservations.

A HOLIDAY AT SQUAW VALLEY OVER WASHINGTON'S BIRTHDAY is in the planning stage. The trip was so successful last year that reservations are being taken NOW! There is no limit on the number — the more the merrier. For details concerning the trip call Jim Patterson, ext. 565.

VACATION SUGGESTIONS FROM THE RECREATION COMMITTEE. . . A week end at the Mark Hopkins Hotel in San Francisco, \$25. per person, or, a trip to Hawaii for \$224. per person (group reservations are not necessary). For brochures and further information call Hy Zimmer (AFS), ext. 258.

AMES BRIDGE CLUB WINNERS on Friday, August 3 were: George Lee and Lionel Levy, Jr. tied with Perry Polentz and Frank Follette for first and second. Ronald Kauffman and Alan Levin tied with Layton Yee and Harry Bailey for third and fourth.

No game was held last Friday, August 10, due to insufficient attendance. Since two games out of the last three have been called off, it has been decided that there will be no regularly scheduled games on Fridays until summer vacations are over. We will hold a game this Friday (August 17) and on the following Fridays only if a sufficient number of bridge players call in to say they will attend. Call Art Kaskey, ext. 224 or 258, or Ron Kauffman, ext. 252, if you would like to have a bridge game this Friday or next Friday. We need the support of the bridge players here at Ames. Join and support YOUR club!

NEW MEMBERSHIP CARDS for Ames Stamp and Coin Club members were distributed recently by Gene Lyman (Human Per Req), Treasurer of the organization. The cards were designed for the group by Burt White, son of John S. White (Guid and Cont).

## Ames Airings

..... by Sharon Scharmen

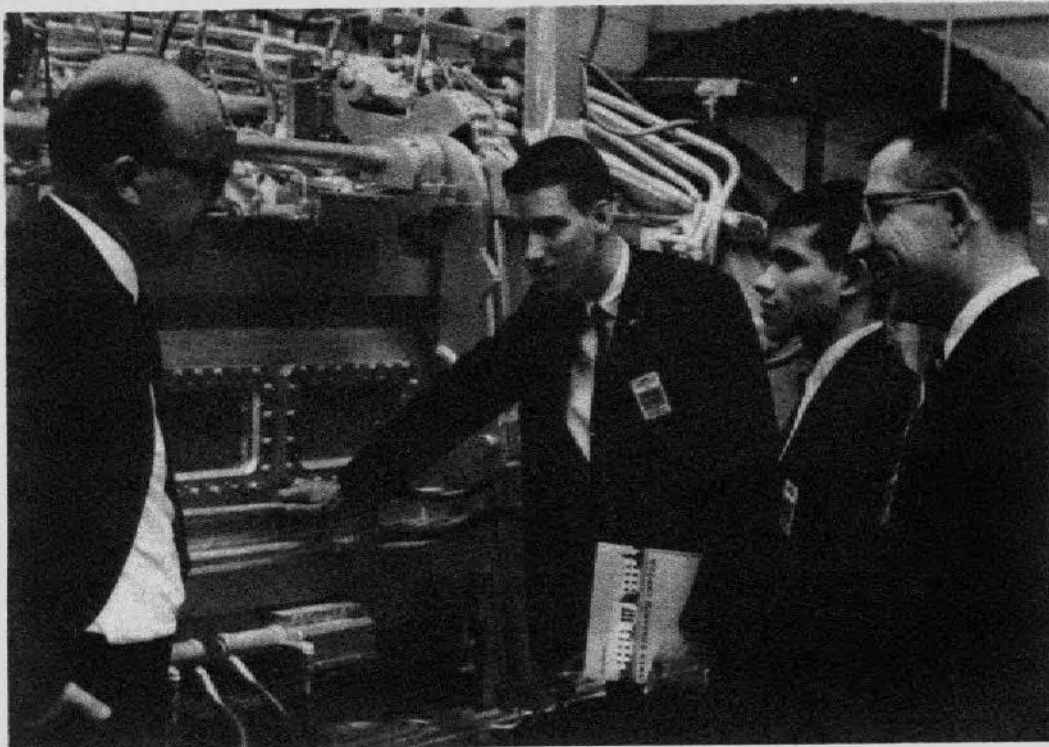
Next summer is the time scheduled for the wedding of NEILL PARKIN (Tri-Aero), one of our summer employees, and JoAnne Torrey of Palo Alto. They are both students at Oregon State University. JoAnne is majoring in home economics and Neill in mechanical engineering. . . . Ruth Richardson came into the Employment Office the other day wearing a gorgeous lei from Hawaii freshly flown in with ELLA STALLINGS (Contr Admin) who spent the weekend in the Islands. She brought back leis for several of the girls, so Ruth said, and Ella had a wonderful time in Hawaii. . . . ED DRAYTON (Mach Tab) and his wife were blessed with a baby boy born on July 26. He was christened Anthony Ray and weighed 5 lbs., 9 oz. . . . A baby girl was born to RONALD POPE (Heat Trans) and his wife on July 21. Aimee weighed 7 lbs. 8 oz., and was 21 inches

long. . . . WALTER McNEILL (FSS) and his wife, Dorothy, are the proud parents of their third child and first girl, Susan Elaine, born July 10, at Palo Alto-Stanford Hospital. Weight, 6 lbs., 9 oz. . . . GRACIE PLANCHON (Cafeteria cashier) is quite proud of her son Jerry who was recently commissioned as a second lieutenant in the United States Air Force upon graduation from Officer Training School at Lackland AFB, Texas. She certainly should be!

## An Invitation . . .

The Model Construction Branch cordially invites all Ames Research Center personnel to attend a retirement banquet in honor of William (Bill) Ward, Chief of the Model Construction Branch, on Friday, August 24, at the Red Coach Inn, Los Gatos. Dinner at 8:00 p.m. For reservations contact Fergus Brown or Andre Bogart, ext. 234, on or before August 17.

## Science Award Winners on NASA-Sponsored Visit to Ames



National Science Award-winning high school students question Clarence A. Syvertson (left), Chief of the 3.5-Foot Hypersonic Wind Tunnel Branch. Tests of the Apollo manned lunar landing capsule are conducted in the tunnel. (l to r) Mr. Syvertson, Richard Falwell, John Taboada, and Mr. C. H. Breedlove.

Two winners of a nationwide high school science contest visited the Center for two days recently as part of their reward.

Richard Falwell of Bethesda, Maryland, and John Taboada of San Antonio, Texas, were awarded visits to the facility, as well as NASA Certificates of Merit, for Space Science projects at the National Science Fair-International held last May in Seattle, Washington. Young Falwell's project was "Spot Cycles of Jupiter and Saturn" and Taboada's, "Cosmic Rays Studied with a Counter Controlled Cloud Chamber."

Dr. Smith J. DeFrance, Director, welcomed the students. Then the young scientists toured the Center and were briefed on Ames projects by Robert M. Barnett (AFS), Brent Y. Creer (Human Sys Eng), Hervey C. Quigley (FSS), Robert T. Jones (Theo), Howard K. Larson (Fluid Mech), Bradford H. Wick (Fluid Mech), Paul F. Yaggy (40 x 80), and Lester G. Pinkham (Mach). The tour finished at the Lick Observatory on Mount Hamilton, where Dr. A. E. Whitford briefed the students.

Taboada was graduated from the L.W. Fox Vocational and Technical High School, San Antonio, Texas, and will enter Trinity University in San Antonio in the fall.

Falwell has completed his junior year

in Walter Johnson High School, Rockville, Maryland. He will complete his secondary schooling at Phillips Exeter Academy in the fall.

Both young men expressed their amazement at the broad scope of activities and facilities here. They were especially interested in the development of the VTOL airplanes and the study of tektites. Tektites are small glassy bodies containing no crystals, and are believed to be of meteoritic origin from outer space. They are studied at Ames to discover atmospheric entry velocities and flight path angles.

The boys were accompanied by Mr. C. H. Breedlove of Bethesda, Falwell's chemistry teacher at Walter Johnson High School.

### AMES ORIENTATION (Continued from Page 1)

fields of endeavor. Although their summer stay is short, it is hoped that the student-employees will give serious consideration to a NASA career after completion of their education.

The Merit Fellowship program, which seeks to stimulate leadership and improve the teaching of science and mathematics in secondary schools, is financed by the Shell Oil Company's foundation.

## Want Ads

For sale - 14-foot ski boat, 25 H.P. Evinrude motor and trailer. Excellent condition. \$595. Call Bud Hult, AN 6-6332.

For sale - 1961 V.W., black, radio, electric gas gauge, seat belt, skitrack, clothes rack, W.S.W. Excellent condition. Call Mountain View 948-0998.

Wanted - To join ride group from vicinity of King and Story Roads, 7:30 to 4:00 shift. Call Philip Meleen, ext. 441 or 378-7157.

Wanted - Ride from vicinity of Thunderbird Trailer Court, El Camino near Lawrence Station Road. 8:00 to 4:30 shift. Call Barbara Carson, AX 6-3876, or ext. 278.

Lost - Library book (copy one), Selfert, Howard S., Space Technology. Call ext. 262.

## Safety Shoes Available Now in Aircraft Supply

Lehigh safety shoes for men are available now at Aircraft Supply located on the north side of the Structural Fabrication Shop, second floor.

There are nine different styles in stock and over 70 different styles catalogued. Styles available include sturdy work shoes, oxfords, mocassins, and leather boots.



According to Jacob C. Smith (Airc Insp), the shoes are sold at wholesale prices — no profit — and any styles not in stock may be ordered. Prices range from \$7.90 to \$11.85 for oxfords and work shoes, and from \$14.20 for boots. Within a few months safety shoes for women will also be stocked and their price will range from \$6.95 to \$7.45.

The Ames Safety Committee encourages the purchase of safety shoes to prevent injuries. The shoes are designed with built-in safety features and sturdy reinforcements that will stand pressures over a ton.

Mrs. Levita Bonnell (Airc Insp) is in charge of the shoe store. She has announced that the store will be open each Tuesday and Thursday afternoon from 1:00 p.m. until 3:00 p.m. For further details call Mrs. Bonnell, ext. 391, or Mr. Smith, ext. 342.

## NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

# The

# Astrogram

### AMES RESEARCH CENTER, MOFFETT FIELD, CALIFORNIA

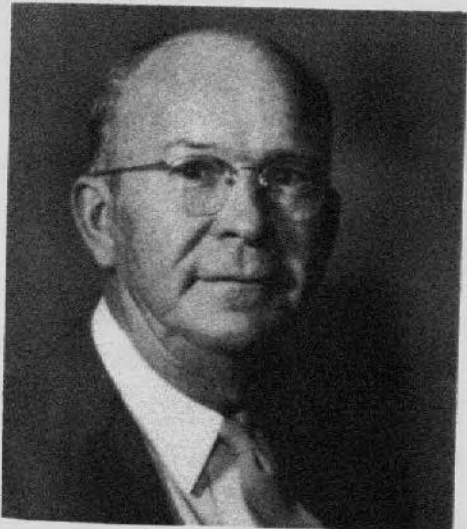
VOLUME IV

AUGUST 30, 1962

NUMBER 23

### Edward Betts Retires After Thirty Seven Years Service

A veteran NASA employee with more than 37 years of service will retire tomorrow (August 31) from Ames Research Center.



Edward W. Betts, Chief of the Technical Services Division, began his career with NASA's predecessor organization, the National Advisory Committee for Aeronautics at Langley Aeronautical Laboratory in 1925. His job was chief machinist and assistant to the Shop Division chief. While still in the east, Mr. Betts viewed a machine in Massachusetts which triggered his pet project — a three dimensional hydraulic tracer for milling airplane propellers. But it wasn't until 1952, when Ames personnel developed a wind tunnel requiring many aluminum blades, that NACA turned to Mr. Betts for his design. The resulting machine, the largest of its kind in the world, mills blades up to eight feet long. "I guess every man in my profession thinks of something unprecedented he'd like to see constructed," said Mr. Betts, "it was very satisfying to see my design become a reality."

(Continued on Page 4)

### Dr. Charles Sonett Appointed Chief of New Space Sciences Division at Ames

The appointment of Dr. Charles P. Sonett as Chief of the newly established Space Sciences Division was announced on Wednesday (August 29) by Dr. Smith J. DeFrance, Director.

Dr. Sonett came to the Center from NASA Headquarters where he was Chief of Sciences, Lunar and Planetary Programs. His primary fields of research are nuclear physics, cosmic rays and interplanetary electrodynamics. He carried out the first experiments in the magnetic fields of space and among these measurements was a first determination of the interplanetary magnetic field and a verification of the propagation outward into space of solar magnetic fields during solar storms. This experiment was carried out on Pioneer V.

During his two years at Headquarters, Dr. Sonett was a member of the Space Sciences Steering Committee, and chaired three of its sub committees: Lunar Sciences, Planetary and Interplanetary Sciences, and the working group on Apollo scientific experiments.

Prior to joining NASA, Dr. Sonett was one of the pioneers of the Ramo-Wooldridge Corporation in Los Angeles, and later transferred to its subsidiary, Space Technology Laboratories, when that organization was established in 1957. There he was in charge of the Space Physics Section and was responsible for experiments on the Able program. Concurrent with his employment at STL, Dr. Sonett was a lecturer in electronics at UCLA.

Dr. Sonett holds a Ph. D. Degree in Nuclear Physics from UCLA. He received his undergraduate degree from the University of California at Berkeley



in 1949. During World War II he was in the U. S. Army for three and one half years and served in the European Theater of Operations.

Dr. Sonett is the author of numerous publications and has contributed a chapter for two books, *Advances in Space*

(Continued on Page 4)

### U. S. Civil Service Exam for Stores Attendant Announced

The Board of U. S. Civil Service Examiners, Ames Research Center, has announced that applications for the Stores Attendant WB-2 Examination are now being accepted.

Applications must be filed not later than the close of business September 10, 1962. Applications received after that date will not be accepted unless they are received by mail and bear a postmark on or before the above date.

Copies of the Announcement with detailed instructions for filing are posted on all bulletin boards at the Center.

## Bradford Evans Appointed Public Information Officer

The appointment of Bradford A. Evans as Public Information Officer for Ames Research Center was announced recently by John F. Parsons, Acting Director.

Mr. Evans succeeds Daniel S. Wentz who transferred to NASA's Langley Research Center last month. He will be responsible for the public affairs of the Center.

For the past 15 years Mr. Evans has specialized in the field of public relations based on the behavioral sciences and communications research. He received his Bachelor of Science and Master of Science Degrees in this field at Boston University.

During World War II he served as a heavy bombardment commander and pilot. Flying a B-17, he led the Allied Air Forces on the aerial bombardment of the St. Benedictine Monastery at Cassino, Italy. Later he was assigned to Headquarters USAF in Washington, D.C. where he was in charge of all public relations for aircraft research and development. In 1949, Lt. Col. Evans organized the first public information program at Cape Canaveral and served there for three years. He was also international relations officer for the AF Missile Test Center.

Evans continued his military career during the Korean Conflict where he was in charge of USAF and Marine Air Corps public relations, and served as advisor to the Korean Air Force. He then became deputy information officer at the Panmunjom Truce Talks. Following graduation from Air Command and Staff College, he was assigned as deputy information officer for the USAF Air Research and Development Command. As a rated pilot Mr. Evans remained on flying status until he reverted to the Ready Reserve in 1957.

Prior to his appointment at Ames, Mr. Evans was with Space Technology Laboratories in Los Angeles.

Mr. Evans is a member of the San Francisco Press and Union League Club, the Aviation Space Writers Association; the International Aviation Writers Association; and Tau Mu Epsilon, national honorary public relations fraternity.

The new public information officer received his primary education in Burlingame, California. He is married to the former Dorothy Mendum of West Springfield, Massachusetts. They are now making their home in Santa Clara.



MORE THAN A CENTURY OF SERVICE TO AMES . . . is represented by this group from Technical Services who will retire at the end of the month. Discussing future plans together are (l to r) Edward W. Betts (37 years), Chief of Technical Services Division; Ray S. Loucks (20 years), Chief of Transportation Branch; Mike M. Bes (15 years), Maintenance Branch; William W. Ward (21 years), Chief of the Model Construction Branch; and Tony Sanchez (15 years), Maintenance Branch.

## Personnel-ly Speaking

The discussion of the U. S. Civil Service Retirement System continues this week with the subject "How Annuities are Computed."

### HOW ANNUITIES ARE COMPUTED

Your basic annuity is computed on the basis of length of service and "high-five" average salary. Your "high-five" average salary is the highest average basic salary you earned during any 5 consecutive years of service. Your basic annuity may be reduced because of retiring before the age of 60, choosing to name a survivor annuitant, or failing to deposit for service during which no deductions were taken from your salary. It will not be reduced for age, however, in cases of disability retirement. No basic annuity can be more than 80 percent of your "high-five" average salary, but you can increase your annuity above this amount by voluntary contributions.

Your yearly basic annuity will be (a) 1 1/2 percent of your "high-five" average salary time 5 years of service, plus (b) 1 3/4 percent of your "high-five" salary times years of service over 5 and up to 10, plus (c) 2 percent of your "high-five" salary time years of service over 10.

(Examples of computations will be explained in the next issue)

### Morning Colors

At 8:00 a.m. each morning the flag of the United States is raised above the Headquarters Building at Moffett Field Naval Air Station, accompanied by the strains of our National Anthem. Out of respect for the flag, Ames employees who may be arriving at the Center at that time, are reminded to stop cars and standfast.

### The Astrogram

Room 108  
Administration Building  
Phone 385

The Astrogram is an official publication of the Ames Research Center, NASA, Moffett Field, California, and is published bi-weekly in the interest of Ames employees.

Managing Editor . . . Brad Wilson  
Editor . . . . . Dot Evans  
Reporters . . . . . NASA Employees

Deadline for contributions:  
Thursday between publication dates

## Plans for Ames Givers Fund Drive Now Underway

Plans are now underway for the annual Ames Givers Fund Drive set to start the middle of September. The chairman of the 1962-63 drive will be appointed by Dr. Smith J. DeFrance, Director, within the next few days.

The campaign will start the week of September 10 with the Advance Giving drive for division and branch chiefs. The main campaign will begin the week of September 24.

According to Edward H. Schnitker, Chairman of the Board of Directors for the Ames Givers, a concentrated effort will be made by the campaign chairman and his assistants to contact all Center employees. "We want to give everyone an opportunity to participate in this worthwhile program, and we expect to have plenty of solicitors to help us do a good job." He went on to explain, "The aim of the drive is for 100 percent participation. No financial goal has been set; however, we are striving for an average of one day's take home pay from each employee."

During the drive emphasis will be placed on receiving a pledge from each individual rather than immediate cash. Further, donors may designate specific agencies to receive their contributions. "We are only a collecting agency," Mr. Schnitker said, "and every penny goes to the charities and communities specified. Our reward is participating in civic projects."

## Recreation Roundup

CHORAL GROUP REHEARSALS are every Tuesday noon, 12:00 to 12:30 in the Instrument Research Laboratory.

FOR LOYAL AMES FORTY-NINERS' FANS who will be attending the games at Kezar Stadium in San Francisco, now is the time to let us know if you wish to go to the games by Charter Bus—charter arrangements must be made well in advance.

AMES BRIDGE CLUB. No bridge games were held on August 17 and 24. The Club will begin regular games starting Sept. 14. Plan ahead to attend the first game of the Fall season and make it a regular habit to join the games often; every Friday, if you can.

## Open Enrollment for Group Life Insurance

An open enrollment campaign will be held during the month of September to enable Ames personnel, not currently enrolled, to participate in the NASA Group Life Insurance Plan. Information brochures outlining the benefits of this plan can be obtained from Division and Branch Offices. A representative of the Home Life Insurance Co. will be available to meet with interested employees by appointment. For further information contact the Personnel Division, ext. 412.

## GOLF

..... by Ruth Richardson

The monthly tournament of the Ames Golf Club was held at the Hillview Golf Course on Saturday, August 18. Play for the day was a Flag Tournament. There were three flights with a nearest the pin contest for each flight.

Winners in the first flight were Ruben DeLos Santos, first; Dick Petersen, second; Paul Barisich, third; Bruce Tinling, Ernie Ranstead and Frank Lazzeroni tied for fourth place. Ruben De Los Santos was nearest the pin.

George White took first place in the second flight, Jim Nelan was second, Ted Plum, third, and Sam Pitts, fourth. Ted Plum was nearest the pin.

Third flight winners were Carol Tinling, first; Chuck Lavarnway, second; Ed Tischler, third; Herb Pankratz, fourth; and Ruth Richardson, fifth. Bill Warren was nearest the pin.

The golfing event of the year will be held September 15. The Almaden Golf course will be the site for the Ames Annual Championship Tournament. Among those participating will be Dick Petersen, defending champion, and Loren Bright, recipient of the Director's Trophy last year.

Make your reservations for the Championship Tournament with Jim Nelan, Dick Petersen, Ruth Richardson, Mitch Radovich, or Ted Plum.

Competition is running high for the Vardon Trophy. Leaders are S. Pitts, 68.8; O. Meckler, 69.8; P. Johnston, 70.0; H. Matthews, 70.3; P. Barisich, 70.5; J. Nelan, 71.0; R. Fahey, 71.2; J. Bellomo, 71.7; F. Corsini, 71.8; and C. Tinling, 71.8.

## Ames Airings

..... by Sharon Scharmen

Back from a quick trip to British Columbia, is ALBERTA ALKSNE (Theo) whose purpose was to visit her daughter and son-in-law at the Circle Bar B Ranch on Lac La Hache. The Circle Bar B is a working cattle ranch, but it also provides excellent accommodations for the many hunters and fishermen who flock to the wild and beautiful Caribou district . . . Cupid scores another victory! Darling DONNA DEVOTO (MZB) announced her engagement to debonair David Lombard on August 11. The wedding date has been set for December 22 . . . Stocking up on safety pins is DEAN HARRISON (MRB) and his wife, Betty, who welcomed baby Richard to their home on August 19. Richard weighed in at 8 lbs., 13 and 1/2 oz. — he is their third child and the first boy.

## Goddard Historical Essay Competition Announced

The opening of the Robert H. Goddard Historical Essay Award Competition, the first contest of this kind, was announced recently by the National Rocket Club.

The nation-wide competition is open to any U.S. Citizen and qualified NASA employees are encouraged to participate. The award is \$200 with an appropriate trophy. Essay themes may follow any significant aspects of the historical development of rocketry and astronautics, and will be judged on originality and scholarship.

Rules of the contest specify that essays are not to exceed 5,000 words and are to be documented. The name of the competitor is not to appear on the essay, and each essay must have a motto selected by the author in addition to the title.

The winner will be announced at the Dr. Goddard Memorial Dinner in March of next year.

Participants have until November 1 to submit their essays to the "Goddard Historical Essay Contest," c/o National Rocket Club, 1745 K Street, NW, Washington 6, D. C.

For further details contact The Astrogram office.



**STUDENT TOUR . .** A group of students from the greater San Jose area toured the Center last Thursday (August 18) as a part of the Summer Science Enrichment Program sponsored by Lockheed Missile and Space Company and San Jose State College. The program is an experimental project designed to motivate capable high school students who lack career goals. The day's events included a talk by H. Julian Allen, Assistant Director, and a lecture on the new Apollo Mid-course Guidance Simulator by John C. Dusterberry, Chief of the Analogue and Flight Simulator Branch, pictured here. Other areas featured in the tour were the Flight and Systems Simulation Branch, the Hypervelocity Ballistic Range Branch, Life Sciences, and the Apollo Capsule. Tour guides were Vernon L. Rogallo (Meas Res) and Roy N. Griffin (Heat Transfer).

#### EDWARD BETTS (Continued from Page 1)

The 37-year veteran was still at Langley when NACA decided to construct a West Coast laboratory. He was detached from his regular duties and was assigned the task of planning and selecting the machinery necessary for shops for the new organization, later to become Ames Laboratory. With the acquisition of machine facilities completed, Betts came west in May 1940, set up the shops and became their first superintendent.

As Chief of the Technical Services Division, Mr. Betts has supervised ten different branches. And each branch helps to provide the "tools" of scientific investigation of space research and aeronautical programs.

A native of Crisfield, Maryland, Mr. Betts began his career in 1911, as a 16-year-old machinist apprentice in the old Hampton Machine Shop and Marine Railway in Virginia. He learned his trade well and moved on to jobs as foreman of automotive and marine repair shops until he joined NACA.

During his many years here, Mr. Betts has had a hand in the development of all machines built by the Center's personnel. He leaves behind him the responsibility for the care and maintenance of over two million dollars worth of equipment, but he takes a greater wealth with him in the good wishes of his many friends and associates.

#### DR. SONETT (Continued from Page 1)

Science, and Space Science, the latter in press.

He is a Fellow of the American Physical Society, a member of the American Astronomical Society, American Geophysical Union, Sigma Xi, and Commission 4, Magnetospheric Radio of URSL.

Born in Pennsylvania 38 years ago, Dr. Sonett is a Californian by choice and has lived in the southern part of the state most of his life. He and his wife, Virginia, and their two children, Eric, 7, and Maria, 5, will make their home in Palo Alto.

## Want Ads

For sale - Boy's blue Schwinn bicycle, 26-inch wheels, 3-speed coaster brake, front wheel caliper brake, \$15. Call James Silver, DA 3-1294.

For sale - Thirty-inch G. E. electric range, \$125. Call C. W. Beck, 739-3323.

For sale - 1958 Shasta Travel Trailer. Electric brakes, sleeps 5, lots of extras. Very good condition. Call Art Melliar, EM 8-9411.

For sale - Cosco nylon net playpen and pad. Almost new. \$14. Call John Howe, DA 5-6051.

For sale - Mobile Ham outfit, Viking transmitter, VFO and Gonset converter. Contact Donald Kassner, 2480 Wyandotte, Apt. 4, Mountain View.

For sale - American Flyer electric train (Frontiersman model), transformer, tracks, 3 cars, \$12. - 2 pairs boxing gloves, new. \$5. - 2 pairs boxing gloves, slightly used. \$2. - Lionel train tracks, 10¢ each. Call G. T. Haney, San Jose PH 6-7188.

For sale - Two Seattle World's Fair ticket books. Worth \$10. each, will sell for \$6.50 each. Call D. Moen, YO 7-1242 after 5:00 p.m.

Wanted - Heathkit Model W-3M, dual chassis power amplifier. Call William A. Ward, YO 8-3256.

Wanted - ride from Mt. View to Foothill College Tuesday and Thursday evenings. Class is from 6:45 to 8:45 p.m., starts September 11. Call Beverly Blanchard, ext. 303, or 967-8304 after 5:00 p.m.

Wanted - Ride from vicinity of Stelling Road and McClellan. 8:00 to 4:30 shift. Call Nancy Hopkins, ext. 631.

Wanted - Car Pool (drive, ride, exchange) from Irvington District, Fremont. 7:30 to 4:00 shift. Call Jean Cook ext. 334, or 656-6260 after 5:00 p.m.

Wanted - To join ride group from vicinity of Cambrian Park Plaza. 8:00 to 4:30 shift. Call Art Mandell, ext. 274, or ES 7-3060.

## San Jose Chorus to Audition for "Messiah"

The San Jose Municipal Chorus has announced that the 39th Season membership lists have been opened for two December 2 performances of Handel's "Messiah," and a May 5 performance of contemporary music, including works by San Jose composers.

Officials of the group have extended a special invitation to singers employed at Ames to arrange for auditions and membership in the Chorus. Among Center employees who have taken part in the performances in the past is Mr. Richard O. Pea, Instrument Systems Development Branch, who has been an active member with the Chorus for many years.

Auditions for membership will begin on Wednesday, September 5, at 7:00 p.m., at The Institute of Music, 1166 Marin Avenue, San Jose. Additional auditions will be held at 9:00 p.m. after rehearsals until October 1.

Rehearsals will be held each Monday from 7:30 to 9:00 p.m. at the Musicians Union Hall, West San Fernando and Locust Streets, San Jose.

## NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

# The Astrogram

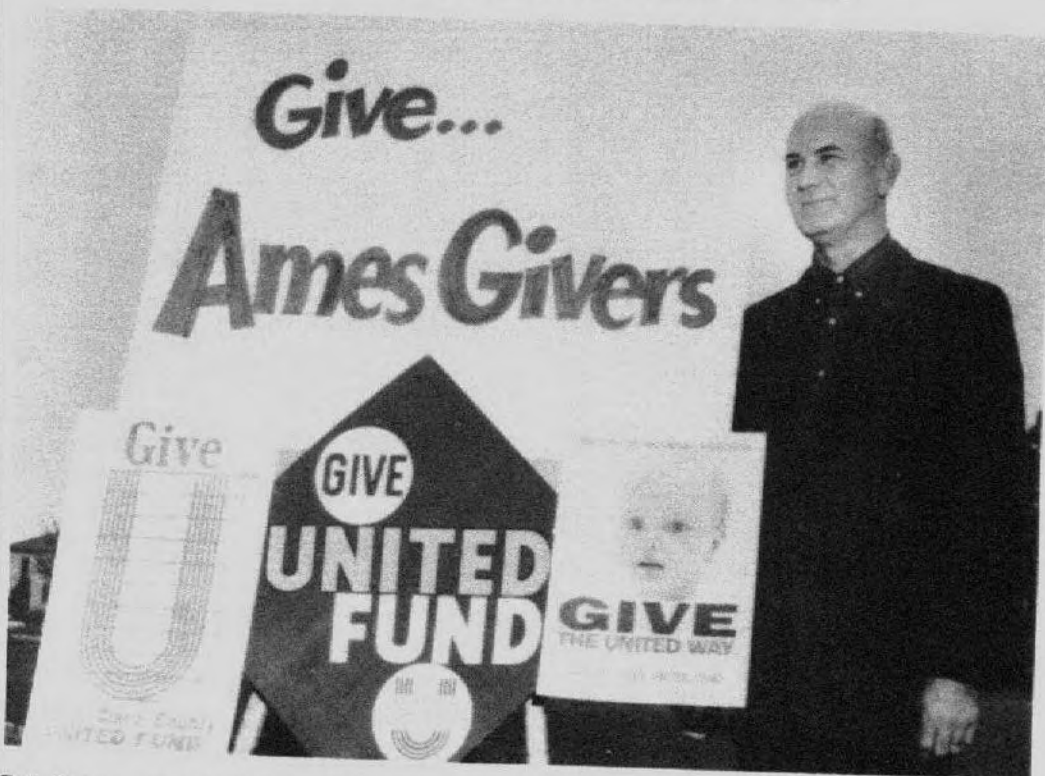
AMES RESEARCH CENTER, MOFFETT FIELD, CALIFORNIA

VOLUME IV

SEPTEMBER 13, 1962

NUMBER 24

### 1962 Ames Givers Fund Campaign Set for Week of September 24



Ted Plum, Ames Givers Chairman, displays several of the campaign posters that will be used to help meet this year's campaign goal of 100% employee participation.

Ames employees will be asked to give their fair share in support of the Ames Givers Fund when the campaign begins the week of September 24th.

Final arrangements for the annual drive were completed recently when Theodore A. Plum, (Mod. Const.) was appointed 1962 - 1963 Campaign Chairman by Dr. Smith J. DeFrance, Director. Mr. Plum will be assisted by solicitors selected from organizational units throughout the Center.

No financial goal has been set to meet the Center's charitable obligations to the local communities, but an average of one day's take home pay from each employee would assure that we had given our fair share.

To meet the aim of the drive for 100 percent participation, solicitors will

stress the acceptance of pledges and will work out financial arrangements to suit personal budgets of the "Givers." Donations may be financed in bimonthly installments or any other payment schedule that will be most convenient to donors.

According to Givers Fund officials, every effort will be made to preserve the anonymity of the donors, and in all cases, the agency designated on the pledge card will be honored.

As in the past, it is anticipated that the largest percent of the contributions will be designated for the Santa Clara County United Fund Drive and the United Bay Area Crusade. Last year some 90 additional agencies were specified by employees and were paid all stipulated funds received. This group included

### Ames Represented at ICAS Congress in Sweden

Maurice D. White and Fred J. Drinkwater, III, research scientists, represented the Center recently at the Third Congress of the International Council of the Aeronautical Sciences (ICAS) in Stockholm, Sweden.

Mr. White presented a paper entitled "Some Design Limitations of Supersonic Transports as Identified in Piloted-Simulator Studies." Authored by Mr. White and Richard S. Bray, the paper describes two piloted simulator studies that are directed to defining the handling qualities requirements for the supersonic transport. In one study the stability requirements for the airplane in cruising flight were investigated on simulators having different motion capabilities. In the second, the landing performance of a delta-wing canard supersonic transport was studied on a

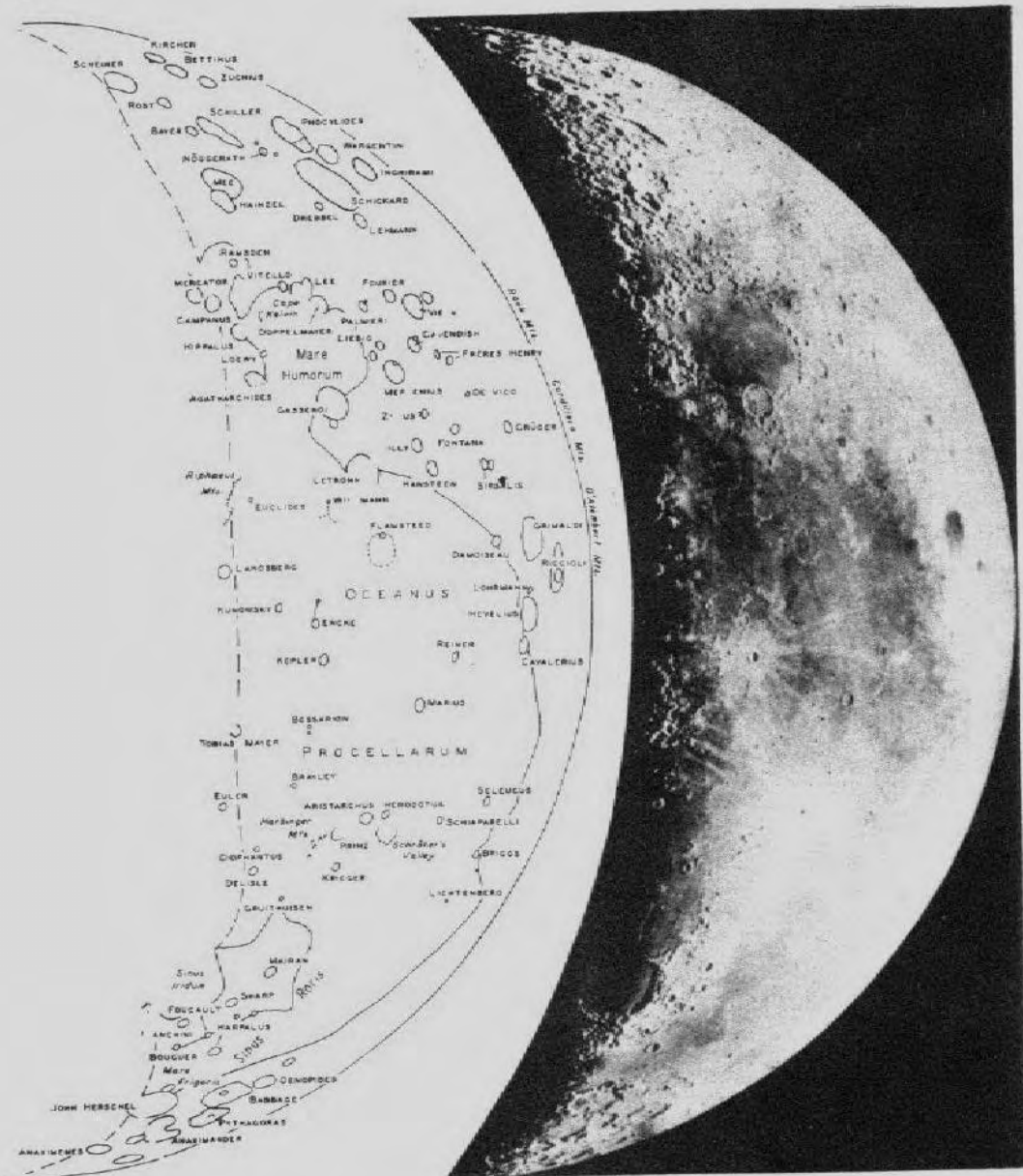
(Continued on Page 4)

far-flung youth and welfare agencies from Maine to Hawaii, and west to Hong Kong.

Solicitors will have brochures explaining the activities and lists of the agencies included in the Santa Clara County United Fund Drive and the United Bay Area Crusade who will benefit. Contributions will be used for the betterment of living conditions for countless youngsters, the growing problems of the aged, needy families and the sick, handicapped, or lonely. Average people are helped, too, through youth guidance and recreation programs. And there are many more such organizations - all needing our support.

The Givers Fund is administered by The Ames Board of Directors who will

(Continued on Page 4)



*Astroventuring...* ★  
★ with walt krumm

## THE WAXING CRESCENT MOON

The phase of the moon presented here has fewer names to learn than the waning crescent moon presented earlier. This is the fine 23 or 24-day crescent that rises early in the morning and we see it faintly in the sky during the day. To see this one properly, one must do some viewing before daybreak. An extremely early hour unless one is a true lunar observer.

Oceanus Procellarum, "The Ocean of Storms," is the predominant feature on the waxing crescent moon. This is the largest of the great dark plains, with an area of about two million square miles. It is lighter in color than other maria because of the Copernican, Keplerian and Aristarchian light streaks which cross its surface.

Appearing like a bay of Oceanus Procellarum, Mare Humorum or the "Sea

of Moisture," lies to the south. Gas-sendi, one of the most beautiful and important of the walled formations, separates Mare Humorum from Oceanus Procellarum.

The northern extension of Oceanus Procellarum is called Sinus Roris, or the "Bay of Dew."

Grimaldi, a great walled plain 120 miles in diameter, and Riccioli, another walled plain, are the fine features on the central east edge of the Moon.

## MOUNTAIN VIEW OFFERING FALL RECREATION PROGRAM

The Mountain View Parks and Recreation Department is offering a full schedule of recreation for adults five nights a week beginning September 17. Activities include basketball, volleyball, badminton, bridge lessons, social and square dancing instruction, and a periodic ping-pong tournament. A minimum fee will be charged for instruction. For further details call the Mountain View Recreation Dept., YO 7-7213.

# Ames Airings

RICHARD TATE (Supply) and his family traveled by trailer to the Seattle World's Fair, going on up to Vancouver and Victoria, British Columbia. From there they made a side trip to Reno with nothing to show for it. Washington and Oregon didn't have any freeway or traffic problems so it was pleasant driving. . . . The Midnight Strollers are adding new members again. A future Library Assistant was born to KATHY GONZALES (Library) and her husband, Anthony. A girl, Melissa Lee, arrived August 30 and weighed in at 7 lbs., 2 oz. . . . BILLY NICHOLS (Physics) and his wife, Ruth, welcomed Billy, Jr. on August 27, who weighed in at a husky 8 lbs. . . . ROBERT MORRIS (ESB) and his wife, Diane, are the proud parents of a son, Eric Robert born at 9:01 p.m. on August 30 at the San Jose Hospital. Weight, 6 lbs., 11 oz., and 19 inches long. . . . Recently returned from vacationing in Minnesota is SHIRLEY MARSHALL (Property)—she visited friends and relatives in that area and toured the Mayo Clinic. She especially enjoyed the eastern states this year because of the heavy rainfall which made the countryside much greener. . . . LLOYD SMITH (SSS) is still recuperating from walking his daughter down the aisle for her marriage on Saturday evening, September 1. Lloyd said this is a shaky experience, especially in front of so many people! In fact, the next day he and his wife took off for the Enchanted Valley Ranch for a week end of camping and relaxation.

## NASA Appoints Dr. Turner to Industrial Applications Post

The appointment of Dr. Howard S. Turner of Pittsburgh, to the Industrial Applications Advisory Committee of the NASA was announced recently by James E. Webb, NASA Administrator.

Dr. Turner is vice president for research and development for the Jones & Laughlin Steel Corporation.

The committee on which Dr. Turner will serve will assist NASA in making the results of space research available to the public through application by business and industry. The chairman is Earl P. Stevenson, former president and chairman of the board of Arthur D. Little, Inc., engineering and industrial research company of Cambridge, Mass.

# Personnel-ly Speaking

The discussion of the U. S. Civil Service Retirement System continues this week with examples of annuity computations.

## HOW ANNUITIES ARE COMPUTED

Example: An employee retiring at age 62 after 25 years of service with a "high-five" average salary of \$5,000. His basic annuity would be figured this way:

1 1/2 % X \$5,000 X 5 -	\$375.00
1 3/4 % X \$5,000 X 5 -	437.50
2 % X \$5,000 X 15 -	<u>1,500.00</u>
Yearly basic annuity -	\$2,312.50 (\$193 monthly)

A substitute formula for figuring any part or all parts of the first formula may be used. It is 1 percent of the "high-five" average salary plus \$25 for each year of service. This formula is used whenever it will produce a higher rate of annuity than any part of the first formula. Its use produces a higher rate of annuity only in the lower salary ranges.

An example would be a person retiring at age 60 after 30 years of service with a "high-five" average salary of \$4,000. This is the way his basic annuity would be figured. Notice that the substitute formula is used for the first 5-year period. That is because it is to the employee's advantage to do so.

1 % X \$4,000 + \$25 X 5 -	\$325
1 3/4 % X \$4,000 X 5 -	350
2 % X \$4,000 X 20 -	<u>1,600</u>
Yearly basic annuity - - -	\$2,275 (\$190 monthly)

The basic annuities shown will be reduced if, for example, you choose to name a survivor annuitant. (This subject will be discussed in a later issue of The Astrogram).

(Next issue: "Minimum Annuity for Disability Retirement")

## Recreation Roundup

..... by Vicki Malatesta

A FALL WEEKEND ON THE RUSSIAN RIVER can be arranged for \$5.00 per person if 30 or more employees wish to go. The Guernwood Park, a resort hotel, offers this budget vacation starting September 14 and continuing through December 23. The price includes accommodations in a cabin or hotel room Friday and Saturday nights, and a full-course family style dinner on Saturday night. For daytime recreation there is horseback riding, fishing, golf, and dancing in the evening. Transportation is extra. For details call Hy Zimmer, Ames Recreation Committee, ext. 258.

APPLICATION BLANKS for Invitation Dinners and International Dinner Club may be obtained from Hy Zimmer. The International Dinner Club books are \$4.00 for a \$4.95 book, and offer dinners at Peninsular restaurants from \$1.00

up. Books for Invitation Dinners are \$5.00 per person and offer dinners in Peninsular and San Francisco restaurants. The books include 26 free dinners when holder is accompanied by a paying guest.

THE AMES BRIDGE CLUB will start its Fall season with a game on Friday, September 14th, at 7:30 p.m. in the Ames cafeteria. Let's have a good turnout! A rule that will be followed strictly is that each player who desires to compete for the monthly Master Point must have attended at least one other game during the month. A contribution of 50 cents a person is all that it costs to play. It's your best recreation buy!!

GOLFERS! Reserve September 15 at Almaden for Ames golf Championship.



HAIL AND FAREWELL . . . to Bill Ward, Chief of the Model Construction Branch as he sets out for a gay life of retirement. Artist, world traveler, and bon vivant, epitomized by the outfit in which fellow employees decked him at a recent farewell party.

## AMES EXHIBITS ON DISPLAY AT SANTA CLARA COUNTY FAIR

A feature of the industrial display at the Santa Clara County Fair now in progress in San Jose, is the NASA Apollo capsule. Constructed at Ames to study crew environment and crew equipment, the capsule is a wooden mockup of the three-man orbital space vehicle scheduled to be launched by the U.S. in 1967. It stands 16 feet high and 12 feet across.

An additional attraction from the Center is a 7-foot model of the Mercury capsule which is exhibited in the U.S. Marine Corps area.

The annual Santa Clara County Fair is held at the Fair Grounds on South First Street, San Jose. The week-long event will run through Sunday, September 16.

### The Astrogram

Room 108  
Administration Building  
Room 385

The Astrogram is an official publication of the Ames Research Center, NASA, Moffett Field, California, and is published bi-weekly in the interest of Ames employees.

Managing Editor . . . Brad Wilson  
Editor . . . . . Dot Evans  
Reporters . . . . . NASA Employees

Deadline for contributions:  
Thursday between publication dates

# AMES GIVERS . . .

(Continued From Page 1)

have two new members this year. They have been appointed to replace John F. Parsons, Associate Director, and John E. Leveen, Personnel, whose terms of appointment have expired. They are Russell G. Robinson, Assistant Director, and Donald E. Schilling, Personnel. Other board members are Edward H. Schnitker, Chairman, James N. Gabbard (Mach), Allan E. Faye, Jr. (FSS), Ronald M. Gerdes (Opr), and Virginia M. Strader (EIB).

# ICAS MEETING . . .

(Continued From Page 1)

fixed-base simulator. In the text Mr. White explained that "configurations currently being considered for the supersonic transport are radically different from any now in flight service, and unusual handling qualities problems are predicted . . . therefore a requirement exists for evaluating the handling qualities for the SST's to determine acceptable limits."

Mr. Drinkwater's paper, entitled "V/STOL Handling Qualities as Determined by Flight Test and Simulation Techniques," was co-authored by Mr. Drinkwater, L. Stewart Rolls, Howard L. Turner, and Hervey C. Quigley.

In his opening statement Mr. Drinkwater said "V/STOL aircraft are now emerging from the stage of being interesting curiosities to the hard realities of operational aircraft. They have posed a challenging set of engineering problems including the severe requirement for high installed thrust-to-weight ratios, the need for high performance in forward flight as well as the ability to hover, and in many cases the need for complex shafting and gearing in order to interconnect multiple engines and rotors." The paper continued with data obtained with the Bell X-14 and compared the study with other flight and simulator studies including recent information obtained from the Lockheed C-130 BLC aircraft and the Ryan VZ-3 deflected slipstream V/STOL aircraft.

Mr. White, Assistant Chief of the Flight and Systems Simulation Branch, has been associated with NASA and its predecessor organization, NACA, since 1938. He came to Ames from Langley Research Center in 1945.

## Board of Examiners Issues Apprentice Exam; Stores Attendant Announcement Stays Open

The Board of U. S. Civil Service Examiners, Ames Research Center, has announced that applications for Apprentice, First Year, WB-2, Examination are now being accepted.

Form 5000AB must be filed not later than the close of business September 27, 1962. Applications received after that date will not be accepted unless they are received by mail and bear a postmark on or before the above date.

Copies of the Announcement with de-

tailed instructions for filing are posted on all bulletin boards at the Center.

Applications for the Stores Attendant, WB-2, Examination will be received until further notice. The decision to countermand the September 10 deadline for filing was made as a result of the insufficient number of applications received to date.

Applications will be rated at intervals and certification of eligibles will be made as the needs of the service require. When sufficient eligibles are obtained, due notice will be given and applications will no longer be accepted. The Form 5000AB cards are available in room 105 of the Administration Building.

## Want Ads

For sale - Steel ironing board, adjustable height, perforated-type surface. Standard size. \$5.00 Call Don Wrathall, RE 6-7280.

For sale - American Flyer electric train (Frontiersman model), transformer, tracks, 3 cars, \$12. -2 pairs boxing gloves, new. \$5. -2 pairs boxing gloves, slightly used. \$2. - Lionel train tracks, 10¢ each. Call G. T. Haney, San Jose, AX 5-7189.

For sale - Paymaster check writer, like new. - L & H electric range, excellent condition. \$50. Call Robert Hinds, RE 6-0898.

For sale or trade - Shopsmith, excellent condition. Loads of extras, including speed changer and jig saw. Looking for a good 12-foot boat and motor. Call Art Melliar, EM 8-9411.

For sale - 1954 Pontiac, 4-door, automatic transmission, straight 8 engine, runs well. Good interior, radio and heater. Call Richard Dockins, AL 2-3917 after 5:00.

For sale - HO gage model railroad equipment (locomotives, cars, tracks, 4-ft x 6-ft partially completed layout, etc.) Make offer. Call Dennis Riddle, 736-0500 after 5:00 p.m.

For sale - 10 gallon aquarium, stand, White mist pump, miracle filter, Jiffy cleaner, thermostat, thermometer, and aerator. Ready to use, \$35. Call CH 8-1060 after 6 p.m.

Lost - Journal of Applied Physics, Vol. 26, (Jan - Jun), 1955. If found call P. A. Johnston, 241-4075.

Wanted - Drivers to setup car pool. Mariposa Garden-Forest Park area, Santa Clara. Call Ben Zeitman, ext. 557, or AX 5-0200.

Wanted - To join car pool. Vicinity of Cupertino High School (Miller and Stevens Creek Roads). Call W. D. Cameron, ext. 440.

Wanted - Ride from corner of Bellomy and Washington Streets, Santa Clara. 8:00 to 4:30 shift. Call Rudy Silva, ext. 252.

Free - 1951 Pontiac with purchase of good battery and "new" tire. Stick-shift. One only, \$50. Call Tom Canning, RE 6-9203.

## Brent Creer Presents Paper at Paris AGARD Meeting

Brent Y. Creer, Assistant Chief of the Human Systems Research Branch, presented a paper recently at the Aerospace Medical Panel Meeting of the Advisory Group for Aeronautical Research and Development, in Paris, France.

The paper entitled "A Summary on the Influence of Sustained Acceleration on Pilot Performance and Pilot Physiology," was authored by Mr. Creer, Dr. Harald A. Smedal, and John D. Stewart.

In making the presentation Mr. Creer stated that "one of the primary factors influencing the design of a manned space vehicle stems from consideration of the influence of acceleration forces on the capabilities of the spacecraft crew." He went on to explain, "as a result of this consideration, a general research program to study the effects of acceleration on the pilot of a space vehicle was initiated at Ames the latter part of 1958." Mr. Creer then presented the most pertinent results gathered from these research investigations with special emphasis on the pilot data performance showing the influence of the force field variables on the pilot control function.

At the conclusion of the AGARD meeting Mr. Creer spent a few days in Paris and London before returning to Ames.

# AMES GIVERS FUND EDITION

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

# extra!

# The

# Astrogram

AMES RESEARCH CENTER, MOFFETT FIELD, CALIFORNIA

VOLUME IV

SEPTEMBER 20, 1962

NUMBER 25

## "Advance Giving" Meeting Termed Very Successful

The annual Ames Givers Fund Drive was off to a flying start last week when division and branch chiefs made their pledges at an "Advance Giving" meeting. According to Ted Plum, 1962-1963 Campaign Chairman, the meeting was highly successful and he and his assistants anticipate the same enthusiastic response from Ames employees when the main drive gets underway next week.

In opening the meeting Dr. Smith J. De France, Director, expressed his personal endorsement of this worthwhile program and encouraged the participation of the assembled group. He also called on them to lend their full support to the campaign which starts the week of September 24.

During the question and answer session conducted by Ed Schnitker, Chairman of the Board of Directors for the Ames Givers, emphasis was placed on the aim of the drive for 100% employee participation. The figure of one day's take home pay is suggested as a guide to help donors estimate what represents a "fair share." Each individual must determine for himself how generously he is able to share in the problems of youth, the underprivileged and the needy who receive assistance from the organizations to which contributions are made.

Starting next week, solicitors selected from organizational units throughout the Center will set out to contact each employee personally. The group is fully prepared to explain the pledge system and they will be well supplied with de-

## GIVING Through the Ames Givers Fund



THE FIRST TO GIVE . . . was Dr. Smith J. De France, Director, pictured here as he contributed his "fair share" to the Ames Givers Fund at the Advance Giving meeting held last week for division and branch chiefs. Helen Faber (Audits and Reports), a campaign assistant, accepts the donation as Ted Plum (left), campaign chairman, and Ed Schnitker (second from right), Chairman of the Board of Directors, wait their turn to pledge.

tailed information concerning agencies helped by Ames Givers Fund contributions in the past.

Contributions received now could represent an individual's complete effort for charitable giving both at work and at home for the entire year to come. Further, all contributions will go to the specific charities and communities designated. And as a reminder, charitable gifts are tax deductible.

## Ames Givers Drive Week Approaches

HOW MUCH SHOULD YOU GIVE?  
THIS DECISION IS UP TO YOU!

ONE DAY'S TAKE HOME PAY IS  
SUGGESTED AS A MEASURE OF  
YOUR FAIR SHARE.

# Ames Givers Fund . . .



100% PARTICIPATION . . . everybody gives to the Ames Givers Fund. Elaine Martin (Center), Employment Branch, was on hand for the Advance Giving meeting last week to take pledge cards from division and branch chiefs. Here, eager donors Bud Montgomery (AFS), James White (Instr Div), Cardy Macon (Central Files), and Otis Strong (Mach Tab) pledge their fair share.

## Givers Fund Assistants Selected to Aid in Drive

With the big push now on for the annual Ames Givers Fund drive set to start next week, eight assistants have been selected to aid 1962-1963 Campaign Chairman Ted Plum.

The group, representing organizational units from throughout the Center, will have some 96 solicitors working under their leadership. They are all geared for this one big drive and are out to meet the aim of the Campaign for 100% participation.

Campaign assistants who will lend a helping hand are Abe Brass (Mach), Jack Wyss (Struct Dynam), Bob Gordon, (Mech Inst), Bud Montgomery (AFS), Russ Fahey (11-Foot), John Peterman, (Res Equip Eng), Helen Faber (Audits and Reports), and Walter Peterson (Life Sciences).

## Accounting of Last Year's Fund Drive

An accounting of the 1961-1962 Ames Givers Fund Drive:

Total Pledged	\$14,050.66
Total Collected & Dispersed	13,513.41

Many agencies benefited from funds contributed by Ames "Givers"—among them were:

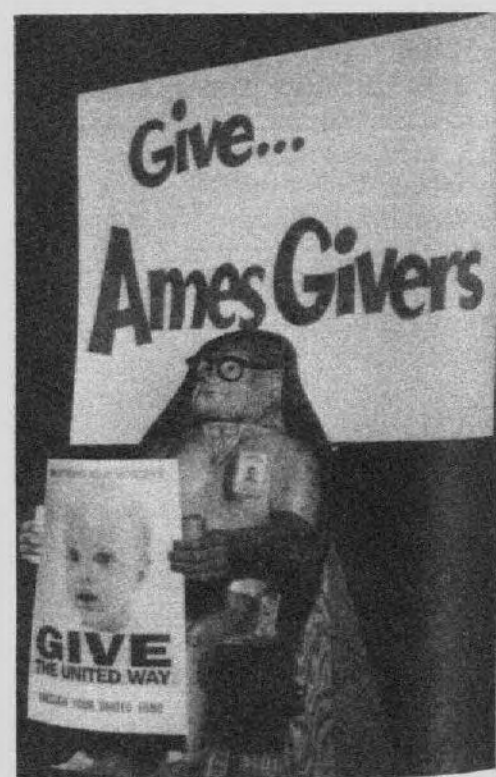
Santa Clara County United Fund	\$ 8,611.00
United Bay Area Crusade (San Mateo County)	808.00
Hope (Hospital Ship)	67.00
Health Agencies (exclusive of March drive)	1,911.00
National Society for the Prevention of Blindness	42.00
National Association for Retarded Children	119.00
Shriners Hospital for Crippled Children	121.00
The balance (\$1,834) was distributed	

to some 86 additional agencies including the Crusade for Freedom, Care, Friends Community, KQED, Father Flanagan's Boys Home, American Legion Rehabilitation Fund, the Sierra Children's Home, and many more.

The various communities and counties designated by Ames employees on their individual pledge cards were credited with contributions as listed above and shared in the distribution of the \$13,514.41.

## Early Returns in from Advance Givers Meeting

The results to date of the Advance Giving drive for division and branch chiefs have been tabulated. Seventy-five percent of the group have pledged and the average donation exceeds the Center's average of one day's take home pay.



LET'S NOT MONKEY AROUND . . . make your pledge to the Ames Givers Fund now. Your fair share (one day's take home pay suggested) will help to meet the many human needs. And Model Shop employees who volunteered our poster model assured us this monkey "wooden" give us a bum steer!

# . . . GIVE YOUR FAIR SHARE

## NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

# The Astrogram

AMES RESEARCH CENTER, MOFFETT FIELD, CALIFORNIA

VOLUME IV

SEPTEMBER 27, 1962

NUMBER 26

### Ames Givers Fund Drive "Off and Running"

Ninety-six Ames Givers Fund solicitors attended a briefing on Tuesday in preparation for the annual fund drive.

Guest speaker was Mr. Walter Kerl, Lockheed executive on loan to the Santa Clara County United Fund Drive. Mr. Kerl discussed the background of the fund organization and stressed that it was organized on sound principles. And is an organization for "givers"—not "receivers." He re-emphasized the point that "this is an opportunity to accept community responsibility and to help our fellow man."

The Ames drive was off and running as soon as the meeting adjourned. Solicitors started their rounds with the slogan "100 percent and generous participation." This can be fulfilled if everyone at Ames will take part and give his "fair share."

This is your chance to help the charities of your choice and in your designated community.

### Wage Survey in Progress

A wage survey which started on Tuesday (September 25) is currently being conducted by the Center. Results of the survey will be used to adjust the pay scales of trade and craft employees to bring them into line with the prevailing wages paid to employees in private industry.

The survey is being conducted jointly with the Bureau of Labor Statistics and the Department of Defense. Several NASA employees are participating in the survey as data collectors and some firms in the Bay Area will be contacted to collect data.

The effective date of any adjustment will be no later than December 9.

### NASA Names Nine New Space Pilots for Space Flight Missions in the Future

The NASA Manned Spacecraft Center recently named nine new members to its flight test personnel pool. They have been assigned to a comprehensive training program at the Center designed to prepare them for possible space flight.

The new flight test personnel are: Neill A. Armstrong, Air Force Major Frank Borman, Navy Lt. Charles Conrad, Jr., Navy Lt. Comdr. James A. Lovell, Air Force Capt. James A. McDivitt, Elliot M. See, Air Force Capt. James A. Stafford, Air Force Capt. Edward H. White, II, and Navy Lt. Comdr. John W. Young.

From these nine and the present seven astronauts will come flight crews for future space flight missions.

Dr. Robert R. Gilruth, director of the Manned Spacecraft Center, who announced the names of the nine, stressed that the new test pilots will not all necessarily participate in actual space flights. "Assignments to flight crews," he said, "will depend upon the continuing physical and technical status of the individuals concerned and upon the future flight schedule requirements."

"The new flight test personnel will, (Continued on Page 4)



VISITORS TO AMES... From the files of John Dusterberry, Chief of the Analog and Flight Simulator Branch, this photograph of a group from the Air Force Aerospace Research Pilot School, Edwards AFB, taken September 25, 1961, as they were briefed on an Ames simulator by (left) Vernon E. Nicholson (AFS). Little did they know that within a year two members of the group, Capt. James A. McDivitt (seated in the simulator) and Major Frank Bowman (far right), would be tapped for training as astronauts. Others in the group from Edwards are (l to r) William Schweikhand, Lt. John Davis, and Major Arthur Torosian.

## Astroventuring...

★ with walt krumm

### KNOW THE MOON Libration Areas

The two movements of the Moon — rotation on its axis and revolution around the Earth — contradicts the old saying "the Moon always keeps the same 'face' toward us."

The elliptical nature of the moon's orbit gives its motion a greater than average velocity at perigee (when the moon is closest to earth) and a slower than average velocity at apogee (when the moon is at its greatest distance from the earth). If the moon is moving more slowly than average, the earth gets ahead of it and we are able to see farther around the leading edge. When the moon moves faster at perigee it gets ahead of the earth and we can see farther around its trailing edge. Because we see 50 percent of the moon at any one time, the extra areas exposed by this behavior are called "libration areas" — libration in longitude.

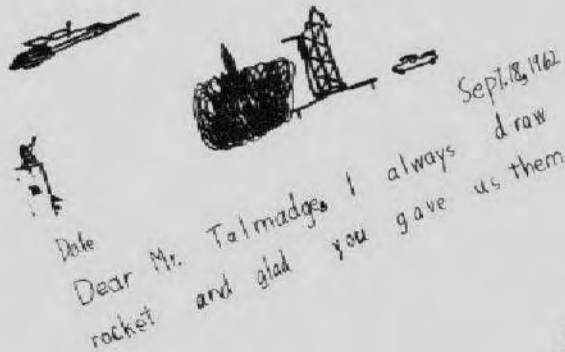
A second type of libration results from the inclination of the lunar equator to about 6 1/2 degrees to the ecliptic and 1 1/2 degrees to its orbit. As a result we see "over the top" of the moon as its north pole is tipped earthward to give us a view beyond, and a half a revolution later letting us see under the moon as its south pole is tipped toward us. This is the libration in latitude.

One of the librations is due to the earth's own rotation, which carries an observer halfway around the world in twelve hours, thus allowing him to view the moon from positions far enough apart to show slightly different hemispheres. This is the diurnal libration.

The earth follows an elliptical orbit so that it slows down in its motion at aphelion and speeds up at perihelion, this, when added or subtracted from the moon's motion, can expose an extra area of the moon.

All this, plus other small librations, adds up to allow us to see about 59 percent instead of 50 percent of the moon's surface.

We see objects at the moon's edge tangentially as the librations allow us to see. We also see into areas which we would ordinarily see only the side of. And too, this leads us to speculate that the "other" side of the moon may not be too different from the one we see.



Dear Mr. Talmadge,  
Thank you for sending your Pictures.

A CHILD'S-EYE VIEW OF THE SPACE AGE. . . Second graders at the Laureola School in San Carlos have shown remarkable awareness of the nation's space effort. The Ames Public Information Office recently sent a packet of brochures and pictures to their teacher, Miss Susan Strong. Last week 27 "Thank you" letters, one from each child in the class, arrived at the Public Information Office. Each letter included a drawing by the child of his concept of some phase of space activity, as well as a brief message. Two of the letters are shown here.

### Limited "Open Season" on Health Benefits Program

Ames employees covered by the Federal Health Benefits program will be able to make limited changes in their health plan during the period October 1 through 15, it was announced recently by the U. S. Civil Service Commission.

Changes permitted are: Employees enrolled for self only may change to a self-and-family enrollment but they may not change plans or options. And secondly, eligible employees who have not been enrolled in a plan under the program at any time during the period from May 1, 1962, to September 30, 1962, will be given the opportunity to enroll.

To assure that all eligible Center employees are aware of the possibility of making these limited changes in their registration, a brochure is presently being distributed to divisions and branches throughout the Center. The booklet describes the changes that can be made and also gives information about the health benefits plans which are making changes in their benefits or rates or both. About a year from now (October 1963) an open season will be held during which eligible employees will be permitted to make unlimited changes in their registration, including changing from one plan to another and from one option to another.

### Chess Demonstration and Tournament at Art Center

A chess demonstration and tournament will be held Saturday afternoon, October 6, at the Los Gatos Art Center, 19010 Austin Way, Los Gatos.

George Koltanowski, chess columnist for the San Francisco Chronicle and well-known tournament player, will demonstrate some of the intricacies of the game.

According to Norman Zimmerman (Fluid Mech), individuals interested in participating in the afternoon's game will be more than welcome. Players are asked to sign up from 11:30 a.m. to 1 p.m. and to bring boards and chessmen. Donation per board is \$1.50. For additional information call 356-6015 after 6:30 p.m.

### The Astrogram

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## Milton Weber Wins Archery Championship

Milton L. Weber (Struct Fab), took top honors as archery champion recently at the "One Million B.C." shoot at the San Francisco Archery range in Pacifica.

Weber, one of several hundred archers who shot arrows over a rugged 28-target course, scored 1,454. Contestants shot four arrows per target, aiming for the white areas, worth five points. Black areas scored three points.

The range was set up with targets designed as prehistoric animals, and all scores were computed on the number of "hits."

Like many others who throng the local range, Weber regards the ancient art of bow and arrow manipulation as a top notch hobby. He proved his interest by finishing third in the state meet this year and continued to show championship form in the San Francisco Archers' Club meet.

# Personnel-ly Speaking

## THE U. S. CIVIL SERVICE RETIREMENT SYSTEM

The discussion of the U.S. Civil Service Retirement System continues this week with the subjects "Minimum Annuity for Disability Retirement" and "If You Retire Before Age 60."

### MINIMUM ANNUITY FOR DISABILITY RETIREMENT

If you retire for disability, you are guaranteed a minimum basic annuity which amounts to the lesser of: (a) 40 percent of your "high-five" average salary or (b) the amount of an annuity figured as shown above after increasing your service by the period from the date of separation to age 60. This guaranteed minimum does not apply if you are already age 60 when you retire or if it is less than your "earned" annuity obtained under the regular formula mentioned earlier.

### IF YOU RETIRE BEFORE AGE 60

If you retire before you are age 60, except for disability, your annuity will be reduced 1/12 percent for each month you are under 60.

If you are involuntarily separated and are younger than 55, your annuity will be reduced 5 percent plus 1/6 percent for each month you are under 55.

As stated above, there is no age reduction for an employee who retires under the disability provision.

(The next issue will continue with, "If You Should Die In Service")

## AMES GIVERS FUND DRIVE. . FLASH! Recreation Roundup

A report received at press time from Ames Givers Fund officials informed The Astrogram editor that employees

of the 9 x 7-Foot Supersonic Wind Tunnel Branch were first to reach the goal of 100% participation.

..... by Vicki Malatesta

AMES BRIDGE CLUB WINNERS on Friday, September 14, were: Mrs. Dwight Moody and Mrs. Robert Spaulding, first; Mr. and Mrs. Arthur Kaskey, second; Mr. and Mrs. Tom Snouse, third, and Mr. and Mrs. Jack Tunnell and Dave Kipping and Lu Cicolani tied for fourth. Winners on Friday, September 21 were: Mr. and Mrs. Ed Collins and Alan Levin and Ron Kauffman tied for first; Mr. and Mrs. Jerry Dickson, third; Mr. and Mrs. Howard Matthews, fourth; and George Lee and Lionel Levy, Jr., fifth. Special guests last Friday were John and Swanee McKay, prominent bridge club directors from San Jose.

## Machine Branch Employees Feted at Farewell Get-together



BEST WISHES FOR A SPEEDY RECOVERY . . . were extended to Maurice Bernstein (right) by Machine Shop employees and their wives at a dinner in his honor held recently at the Navy Chief's Club. Henry Citti (left), Chief of the Machine Branch, expressed the hope that Maurice would return from disability retirement before too long. Mrs. Bernstein is pictured standing between the two men.

SPURS AND A TEN GALLON HAT. . . for Norman Gabbard, a long-time employee of the Machine Branch, as he prepares for his transfer to NASA's Manned Spacecraft Center, Houston, Texas. Fellow Machine Branch employees and their wives gathered at the Navy Chief's Club recently to bid farewell to "Norm" and his wife, Louise (seated), prior to their departure for the "Lone Star State."

## An Invitation . . .

A retirement dinner honoring Walter Quigg, Chief of the Simulator and Systems Service Branch, will be held at the Elks Club in Palo Alto on Tuesday, October 9. An invitation is extended to Mr. Quigg's many friends to attend. A social hour will be held at 6:30 p.m. followed by dinner at 7:30 p.m. For reservations call Joe Quartuccio, ext. 348, or Lloyd Smith, Al Puccinelli, or Lynne Little, all on ext. 386.

## Foothill College Offers Planetarium Lectures

Foothill College Planetarium will sponsor a Fall lecture program entitled "The Visible Universe," starting on Thursday, October 4. The lectures will be open to the public without charge and will be held each Thursday from 7:30 p.m. to 8:30 p.m. throughout the Fall semester except during the holidays.

The program consists of a series of four lectures entitled "The Circumpolar Constellation," "The Constellations of Summer and Autumn," "The Solar System," and "Survey of the Universe."

For new comers to the area, Foothill College is located at 12345 El Monte Rd. Los Altos Hills.

## GOLF

..... by Ruth Richardson

Television cameras should have been rolling at the Alameda Golf Course on Saturday, September 15. TV's Championship Golf? couldn't have matched the superb playing of some of our Ames golfers. Competition and spirits were high as 52 members teed off, all vying for the coveted trophies. It was the last putt on number 18 green which determined the winners.

Otto Meckler fired a four over par 76 to become Ames champion for 1962, giving him this honor for the third time.

Jim Bellomo was the surprise player of the day taking low net honors with a 64 and winning the Director's Trophy.

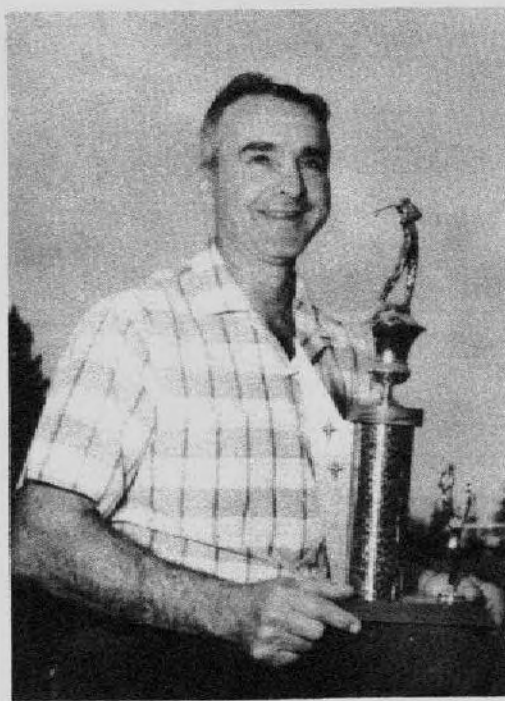
In the first flight Larry Graham took top honors with Al Petretti and "Debby" DeBevoise tied for second, and Dick Petersen taking fourth place.

First place went to Loren Bright in the second flight, with Warren Anderson, second, Bill Hill, third, and Ted Plum, fourth.

Third flight winners in order were Sam Pitts, Nobuo Nakamatsu, Mitch Radovich, and Harold Clements.

In the fourth flight Armando Lopez was first, Nick Vojvodich, second, Ed Tischler, third, and Ruth Richardson, fourth.

Herb Pankratz and Jim Silver tied for first place in the fifth flight (play-off will be during the October monthly tournament). Third place went to Russ



OTTO MECKLER (Struct Fab), Ames Golf Champion for 1962, winning with a four over par 76.



JIM BELLOMO (Supply), winner of the Director's Trophy with a low net of 64.

Fahey and fourth to Genevive Saunders.

The running six match handicap tournament has reached the final match. Soon to be playing for the handicap championship title will be Loren Bright and Ruth Richardson.

Ames golfers have two more tournaments before winding up the 1962 season. The group will play at Riverside Golf Course on October 20, and at the new Santa Teresa Golf Course on November 17.

## Want Ads

For sale - House, 3-bedroom, 2-bath, with w/w carpeting, aluminum siding, fenced-in back yard, landscaped. Full price, \$16,300. \$1,000 down. Off Jarvis Avenue, Newark. Call SY 7-5821 after 5 p.m.

For sale - House, 3-bedroom, 2-bath, double garage, intercom throughout. Excellent location. 610 Kiely Blvd., Santa Clara. Call G. T. Haney, CH 8-1469.

For rent - House, 5 rooms, furnished. Reference required. 621 Harrington Ave., Los Altos. Call Frank W. Mellick, 741-5362.

For rent - House, 2 bedrooms, unfurnished. Fenced in back yard, 2-car garage. Will be vacant October 15. May be seen any time. Call E. C. Chavez, DA 2-0526.

For sale - Deer rifle, Remington Gamemaster, slide action, .30-06, with carrying case. Lyman sights, shells, extra clip, clip carrier, and shock pad. \$95. Call Robert Kramer, 296-3793.

For sale - 1 1/2 inch centrifugal pump (portable), driven by 2 h.p. gasoline engine (rebuilt). Small milling machine (used). New 10-inch band saw, \$75. See at 28084 Purissima, or call DA 5-1911 before 6:30 p.m.

For sale - AKC registered Dachshund pups. Small standard. Black and red. Cellarius stock. Call YO 7-2745.

For sale - Fibre glass cabin cruiser (unfinished), 18-foot. White hull and Persimmon deck. 50 lbs. of floatation already installed. Seen by appointment. Greg DeSantos, P.O. Box 85, Mt. View.

For sale - 1950 Ford, Dependable work car. Good tires and new brakes. \$100. Call Harry Hanser, RE 9-3329.

For sale - 1960 Volkswagen, good condition. Call Father Griffin, Navy Base Chaplain, YO 7-6961, ext. 268.

Wanted - Two people to share transportation with existing group of three. Payne Ave., Santa Clara-Saratoga Hwy. 7:30 to 4:00 shift. Call Bill Carpenter, ext. 211.

Wanted - Ride from 1700 block Bucknall Road, Campbell. 8:00 to 4:30 shift. Call Joyce Drake, ext. 274, or 378-6164 after 5:30.

Lost - 20-year NASA pin. Lost September 12 in vicinity of Admin. Annex or parking lot, or Data Reduction Bldg. parking lot. Finder please call Vivian Sneed, ext. 274, or 948-2867.

Anyone having or knowing the whereabouts of the book, *The Earth As A Planet*, Kuiper, Copy 3, call D. M. Wrathall, ext. 262.

Free - 5-month old puppy, black and brown. Part Cocker and part German Shepherd. Call Bev Blanchard, 253-6467 after 5:30 p.m.

### NINE PILOTS NAMED (Continued from Page 1)

however, have an important role in the manned spacecraft center space program in addition to any flight preparation. This role will include contributions to engineering design, development of future spacecraft, monitoring of flights and to the development of advanced flight simulators," Dr. Gilruth said. Selection of the nine test pilots culminates some six months of extensive evaluation of the qualifications of more than 200 volunteers from among military and civilian applicants.

# NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

## The Astrogram

AMES RESEARCH CENTER, MOFFETT FIELD, CALIFORNIA

VOLUME IV

OCTOBER 11, 1962

NUMBER 27

### Carr Neel Presents Thermal-Radiation Measurement Paper

Arabs crossing the desert and man enroute to the Moon are worlds apart, but, according to Carr B. Neel, Ames research scientist, the Arab wears white clothing and man will ride in a white space vehicle for much the same reason: heat control.

Thus, in lay terms, an explanation of the paper Neel read at a three-day "Symposium on Measurements of Thermal Radiation Properties of Solids" held recently at the Biltmore Hotel in Dayton, Ohio, and sponsored by the Aeronautical Systems Division, the National Bureau of Standards, and NASA.

The paper, "Measurement of Thermal-Radiation Properties of Temperature-Control Surfaces in Space," authored by Mr. Neel and Gilbert G. Robinson, discusses the measurement techniques devised to determine the lifetime of temperature-control coatings for spacecraft.

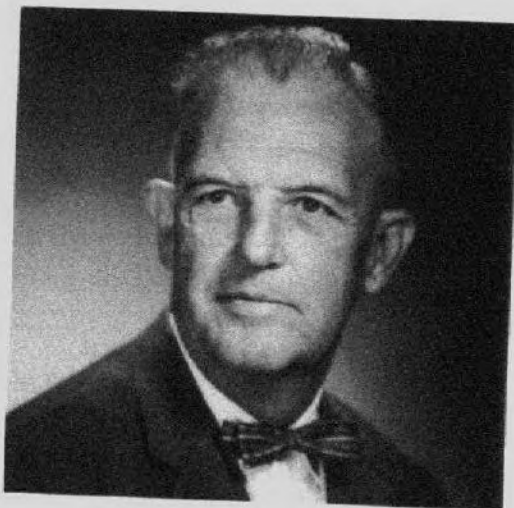
Mr. Neel explained, "Measurements to determine the emissivity stability of spacecraft coatings were flight-tested when an experimental package from Ames was sent aloft on the Orbiting Solar Observatory (OSO) satellite last March. The results of this test created much interest at the symposium, Mr. Neel said, "because we presented the only actual flight measurements. Other experimental techniques reported there were the results of ground measurements."

In his concluding remarks Mr. Neel stated, "The study determined that comparisons of the flight measurements with values obtained in the laboratory showed an over-all agreement to within less than 10 percent". He then added, "To assure over-all reliability

(Continued on Page 4)

### Raymond E. Braig Appointed Chief of the Ames Technical Services Division

The appointment of Raymond E. Braig as Chief of the Technical Services Division was announced recently by Dr. Smith J. DeFrance, Director. Mr. Braig replaces Edward W. Betts who retired last month after 37 years of service with NASA.



In discussing his new role Mr. Braig said, "I intend to carry on the traditions of NASA and Ames. Our ten branches will continue to do their part in the scientific investigation of space research and aeronautical programs."

Mr. Braig began his career with NASA and its predecessor organization, NACA, at Langley Field, Virginia, in 1923, as a student summer employee. He joined the NACA ranks on a full time basis as an aircraft mechanic's helper in 1925. From that early association developed a career with the organization of more than 35 years.

A native of West Point, N. Y., and the son of a field artillery instructor at the Military Academy, Mr. Braig is one of five brothers, all of whom are devoting their considerable talents to the space effort at various NASA Centers.

During the early years of his career, Mr. Braig was a special student at William and Mary College, where he earned his pilot wings. To further his education he studied at the University of Virginia at night, took Air Force extension courses, and attended a Pratt and Whitney Company school. He also joined the Naval Reserve to increase his knowledge of aircraft.

In 1940 he was offered the opportunity to help pioneer the establishment of the new Ames Aeronautical Laboratory. He arrived here in June of that year and was assigned as construction inspector of the small hangar. When the job was finished he joined the aircraft maintenance inspection section of Flight Operations. Later, Flight Operations was split and Mr. Braig went with the Technical Services Division.

He has worked on many challenging projects but one stands out as "One of the highlights of my career." It was the thermal de-icing program

(Continued on Page 4)

### Bloodmobile Visit

The Santa Clara Valley Bloodmobile will visit Ames on Thursday, October 25, from 9 a.m. until noon.

All Ames employees who wish to donate blood may sign up on the sheet provided for that purpose in each division and branch, or call Personnel, ext. 411, for an appointment. As before, members of an employee's family may donate also.

Blood on deposit at the Blood Center is available to all Ames personnel and their immediate families.



### KNOW THE SKY The Ames Astronomy Club

The Ames Astronomy Club will hold its first observing session of the season at the Ames telescope atop of the Space Flight Simulation Laboratory, on Friday, October 12, at 8 p.m.

The group will assemble at the parking lot to the west of the laboratory between 7:45 and 8 p.m. and will proceed to the observing site together.

You may consider yourself a member of the club if you have an interest in the sky and wish to view some of the objects in the heavens. A formal membership list will be prepared at a later date.

A word of caution for observers interested in the Friday night session, don't arrive later than 8 p.m. The door to the laboratory is locked and there may be no one available to open it.

### Liquid Hydrogen for Space Program Use

Steps to intensify NASA's development program for space use of liquid hydrogen were announced recently by Administrator James E. Webb.

Project management of the liquid hydrogen-fueled Centaur and the M-1 rocket engine is being transferred to Lewis from the Marshall Space Flight Center at Huntsville, Ala., which is developing NASA's large Saturn launch vehicles for manned flights.

Administrator Webb said, "This transfer will allow the Marshall Center to concentrate its efforts on the Saturn vehicles for the manned lunar landing program . . . It will permit the Lewis Center to use its experience in liquid hydrogen to further the work already done on one of the most promising high energy rocket fuels and its application to Centaur and the M-1."

Centaur is a liquid hydrogen upper stage powered by two 15,000 pound thrust RL-10 engines. Its prime mission is to furnish the power to soft land the 2,100-pound Surveyor spacecraft on the moon. Future missions include Mariner interplanetary flights and boosting spacecraft into 24-hour synchronous orbits.

## Personnel-ly Speaking

### THE U. S. CIVIL SERVICE RETIREMENT SYSTEM

The discussion of the U.S. Civil Service Retirement System continues this week with the subject "If You Should Die in Service".

#### IF YOU SHOULD DIE IN SERVICE

If you should die while a Federal employee, your widow will automatically get an annuity provided you have had at least 5 years of civilian service. Her annuity will be 50 percent of an annuity based on your "high-five" average salary and years of service. If the widower of a woman employee was dependent on her—that is, if he is incapable of self-support because of disability—he is entitled to an annuity figured the same way. These annuities are payable immediately upon the death of the employee and no age requirement has to be met by the widow or widower.

Your dependent children will also be entitled to annuities if you die in service, and their annuities may be figured in one of two ways:

If one parent survives, each child who received more than half his support from the deceased employee will receive an annuity of 40 percent of the employee's "high-five" average salary divided by the number of children. However, annuity to any one child is limited to \$600 a year and the total to all children cannot exceed \$1,800 a year.

If no parent survives, each child will receive an annuity of 50 percent of the employee's "high-five" average salary divided by the number of children. However, annuity to any one child is limited to \$720 a year and the total to all children cannot exceed \$2,160 a year.

An example would be a Federal employee who dies leaving a wife and 3 minor children. His annuity based on a "high-five" average salary of \$3,600 and 15 years of service would have been \$980 a year. His widow will get half of that, or \$490. The children are entitled to \$1,440 (\$480 each). This would mean an annuity check of \$161 a month for the widow and her family.

(Next issue: Providing for Your Survivors on Retirement)

The M-1 engine is the largest liquid hydrogen/liquid oxygen rocket engine now under development. It will have 1/2 million pounds of thrust and is being designed to be clustered to power the second stage of a Nova launch vehicle.

Lewis was among the pioneers in liquid hydrogen propulsion research. Engineers there started a study of hydrogen propulsion as early as 1950. They began a series of test firings of a 5,000-pound thrust hydrogen engine in 1953.

According to Mr. Webb, combining hydrogen propulsion development programs, such as Centaur and the M-1, at Lewis with their on-going liquid hydrogen technology program should benefit both efforts.

THE AMES STAMP AND COIN CLUB will meet on Friday evening, October 19, at the Ames Cafeteria.

### James Wadsworth to Lecture at Foothill College

James Wadsworth, former United States Ambassador to the United Nations will be a guest lecturer at Foothill College on Friday, October 12, at 8:15 p.m. The subject of his talk is "Challenge to the United Nations". Presented by the Lectures and Forums Committee, Public Events Board, the talk will be given in the college auditorium and is open to the public without charge.

#### The Astrogram

Room 108  
Administration Building  
Phone 385

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Managing Editor . . . Brad Wilson  
Editor . . . . . Dot Evans  
Reporters . . . . . NASA Employees

Deadline for contributions:  
Thursday between publication dates

## Mariner II in Flight More Than a Month

The Venus-bound spacecraft Mariner has been in flight a little over a month. Launched by NASA from Cape Canaveral on August 27, the craft has now traveled more than 5 million miles from earth. And has sent back to earth scientific information on interplanetary space from a greater distance than any other space probe except Pioneer V. (Pioneer V, launched March 11, 1960, sent back useful information from about 10.5 million miles and was tracked to 22.5 million miles.)

The flight path of the spacecraft was altered on command from the earth on September 4, so that it would come within about 10,000 miles of Venus on December 14. This midcourse maneuver marked an important United States achievement in spacecraft technology. It was the first time such a complicated task had ever been performed by a spacecraft.

Mariner's fateful rendezvous with Venus will take place on December 14—after 109 days and 180 million miles of travel in a long arcing flight.

When Mariner's instruments scan the mysterious planet Venus, it will be more than 36 million miles from the earth. Communications with the spacecraft at this distance will establish a new record. It will be by far the greatest distance in space from which man has received meaningful scientific information. And, it will be the first successful planetary flight ever conducted by man.

## Lectures on "Planning Ahead for Retirement"

The Department of Adult Education, Palo Alto, is sponsoring a program entitled "Planning Ahead for Retirement," at the Palo Alto High School, 50 Embarcadero Road, each Monday evening from 7:30 to 9:30 p.m. The enrollment fee is \$1.50. The series of lectures will continue through October 29 and include the following:

**HOUSING** Oct. 15  
"Evaluating Retirement Homes"—Mr. Roy Pryor, General Manager, California-Nevada Methodist Homes, Oakland.

"Real Estate for the Retired"—Mr. W. G. Alhouse, Alhouse Realty, Inc.



AMES GOLF CHAMPIONS . . . smile broadly as they display their hard-won trophies. Winners are (from l to r) Sam Pitts, third flight, Lauren Bright, second flight, Larry Graham, first flight, Otto Meckler, Ames Golf Champion for 1962, Jim Bellomo, Director's Trophy, and Armando Lopez, fourth flight. Herb Pankratz (far right), tied with Jim Silver for fifth flight honors. Jim was unavailable when the group was photographed but he'll be on hand for the play-off this month.

## GOLF

..... by Ruth Richardson

Just a reminder for all Ames golfers.. the next regular monthly tournament will be held at the Riverside Golf Course on Saturday, October 20. Tee-off time has been set for 10:30 a.m. For reservations contact Mitch Radovich, ext. 232, Ted Plum, Jim Nelan, or Ted Smith, ext. 234, no later than noon, October 18.

### EMPLOYMENT

Oct. 22

"Selling Yourself to Job Success"—Mr. William Sears, Sales Promotion Manager, Philco Corporation, Palo Alto.

"You and Your Retirement"—Mr. F. Schabel, Supervisor of Retirement Benefits, Crown Zellerbach Corporation, San Francisco.

### HEALTH

Oct. 29

"Chronic Diseases"—Dr. Daniel J. Feldman, Director, Division of Rehabilitation Medicine and Associate Professor of Medicine, Stanford University School of Medicine.

"Geriatric Psychiatry"—Dr. S. Kolko, Assistant Professor, Department of Psychiatry, Stanford University School of Medicine.

## Ames Airings

..... by Sharon Scharmen

Just returned from fall vacations — R. L. HISERMAN (Photo) and his wife spent two lazy weeks fishing the Klamath River. . . MAXINE BROWN (Struct Dynam) toured the Hawaiian Islands for 16 glorious days. . . ART MELLIAR (Photo) and his wife and three children spent a week boating and fishing at Lake Alpine. . . . In the baby parade — JOE ROKOVICH (Supply) and his wife, Joyce, are the parents of a girl, Joelle Marie, born September 7, at the El Camino Hospital. Weight, 5 lbs., 14 oz. . . HUBERT C. VYKUKAL (Human Perf Reg) and his wife, Joan, are parents of a son, Michael Brian, born on September 29 (Joan's birthday, too). Weight, 7 lbs., 9 oz. . . . JUDY HOLLENBECK (Fluid Mech), and her husband, Jack, are parents of a girl, Rebecca Ann, born at the Palo Alto-Stanford Hospital on October 1. Weight, 5 lbs., 5 oz. . . Congratulations to Dr. Barrett S. Baldwin (Theo) — the Doctor of Philosophy Degree was conferred on him by Stanford University on Friday, September 28.

## A Winter Holiday at Squaw Valley Can be Yours!



A winter holiday amid the snowy slopes of Squaw Valley is now being offered by the Recreation Committee for the pleasure of Ames employees. The date is February 21 - 24, 1963, the week end that includes Washington's Birthday, a legal holiday.

According to the group that took the trip last year "a great time was had by all." The facilities have been designed for year-round use, are well heated, comfortably furnished, and they found the new lounge, with its glowing fire, a true haven after a day in the crisp, cold air.

The Ames package trip includes round-trip transportation by Greyhound Bus from the Center, a box lunch for a snack enroute, three evening meals — two at Squaw Valley and one at Sacramento on return — and three nights lodging.

Rates for ski lessons and the lift will be offered at a discount. Evening

entertainment is free and so is the use of the swimming pool (for the brave). Side trips can be arranged for skiing at Alpine Meadows and gaming at North Tahoe. Also, church services are available.

The price of this fun-packed week end is \$36.50 per person, two in a room, \$35.50, three in a room, or \$48.50, for a single.

The bus will leave directly after work on Thursday, February 21, and will return at 11 p.m. on Sunday, February 24.

For reservations and further details contact Jim Patterson, ext. 565.

## Recreation Roundup

..... by Vicki Malatesta

AMES BRIDGE CLUB WINNERS on Friday, September 28, were: Mr. and Mrs. Edward Collins, first, Mr. and Mrs. Jerry Dickson, second, and Alan Levin and Ron Kauffman, third. Monthly Master Point winners on Friday, October 5, were: Mr. and Mrs. Arthur J. Kaskey, first, Mrs. Dwight Moody and Mrs. Robert Spaulding, second, Mr. Mr. Moody and Mr. Spaulding, third.

There will be no bridge game on Friday, October 12. The Santa Clara Valley Fall Sectional Championship Meet is being held October 12, 13, and 14, at the Los Gatos swim and Racquet Club, 15,000 Oka Road, L. G., and Ames players are urged to attend this sectional.

## Want Ads

For sale - House trailer, 1956 Spencecraft, 34 ft. by 8 ft., 2-bedroom, bath, awning, and storage shed. Asking \$1,500. Call T. E. Polek, DA 3-5245.

For sale - T-Bird, 1959, full power, white, hardtop. Call Pat Nelson, YO 8-1247.

For sale - Chevrolet, 1953 model, 4-door, automatic drive, new set of tires. Will require new starter solenoid to put in good running condition. Asking \$150. Call Allan Sanborn, DA 6-1269.

For sale - Red TR-3, 1958 model. New tires and new clutch. Excellent condition. Price, \$1295. or best offer. Call Doug Morton, 292-9096.

For sale - Buick, 1959 Invicta. Power steering-brakes-6 way seat. Available in approx. 4 weeks. Call Lea Dodge, Santa Clara 296-1699.

For sale - Mercury 70 outboard motor, 6-gallon tank and hose. Excellent condition. Call Gary Roberson after 6 p.m. at FR 8-8713.

For sale - Portable centrifugal pump, 1 1/2-inch, driven by 2 h.p. gasoline engine (rebuilt). Call V. Kirk, RE 9-9363.

For sale - Full blooded Chihuahua, runs good. Call J. R. Tynsky. YO 7-3968.

For sale - Pedigreed German Shepherd puppies, 6 weeks old, 2 males, 3 females. Males, \$25. each, females, \$20. each. Call 248-9707.

Wanted - Ride or riders from vicinity of Freeway and A Street, Hayward. 8 to 4:30 shift. Call Paul Reyes, ext. 401.

Wanted - Two people to share transportation from San Francisco. 8 to 4:30 shift. Call Louis Polsky, ext. 237.

Wanted - Ride from Dolores Street (between 15th and 16th Streets) San Francisco. 8 to 4:30 shift. Call Susan Hudak, ext. 415, or UN 1-4362 after 6 p.m.

Wanted - Ride from Gramercy Place, near Alum Rock Ave. and McKee, San Jose. Mary Carlisle, ext. 589, or 251-3755.

BRAIG  
(Continued from Page 1)

conducted during the war. This experiment involved months of flying in and out of storms in Minnesota during the coldest winter the state had known. "Flying in 35-degrees below zero weather, getting 'iced and de-iced' until the problems were solved, it was a great experience," said Ray Braig.

For the past few years Mr. Braig has served as assistant chief of the division, sharing the responsibility of providing support for the research facilities of the Center. "I have learned many things through the years," Mr. Braig said, "and one is that modern substitutes and synthetics cannot replace experience."

Mr. Braig and his wife, Catherine, make their home in Palo Alto.

NEEL

(Continued from Page 1)

and accuracy in the technique for determining the radiation characteristics of the test surfaces, requirements for the experiment were set forth at the outset. Further, the temperature-measuring technique requires precise measurement of the surface temperature history, good thermal isolation, and accurate knowledge of the amount of planetary radiation."

# NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

## The Astrogram

AMES RESEARCH CENTER, MOFFETT FIELD, CALIFORNIA

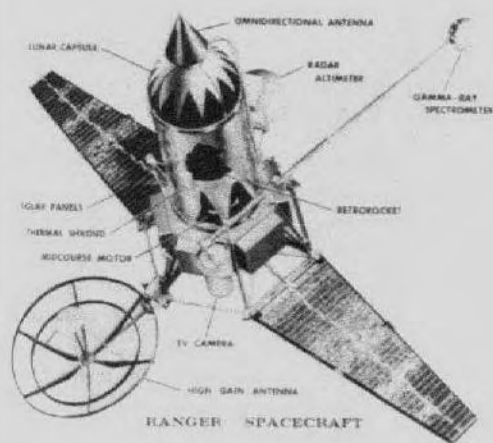
VOLUME V

OCTOBER 25, 1962

NUMBER 1

### New Rangers Added to NASA Space Program

The addition of five lunar spacecraft to the Ranger Project to provide further support to the manned lunar exploration program was announced recently by NASA.



The five new Ranger spacecraft, designated as Rangers 10 through 14, will bring the total count to 14, and are scheduled for flight in 1964.

Because the spacecraft design can accommodate various payloads, an exact determination of the payloads for each of the five new spacecraft will not be made until a later date.

However, both the retrorocket delivery system developed for Rangers 3 through 5 for rough landing capsules on the moon and camera techniques designed for Rangers 6 through 9 will be considered in the payload selection.

"Use of these new Ranger spacecraft will increase the probability of obtaining lunar surface detail information that can be used in the manned landing system design," Dr. Homer E. Newell, NASA Director of the Office of Space

(Continued on Page 8)

### The Appointment of Five Ames Staff Members to New Positions Announced

The appointment of five members of the Ames staff selected to fill existing vacancies within the Center was announced recently by Dr. Smith J. DeFrance, Director.

Theodore R. Smith, Chief of the Model Construction Branch, replaces William W. Ward who retired in September. Starting as an apprentice cabinet maker in 1922, Mr. Smith continued in this field throughout his early career. He came to the Center in 1943, as a modelmaker and has worked on many of the major model projects during the past 19 years. He was a member of a group of Model and Machine Shop employees commended by the Director for expediting the fabrication of wings for the 6-by6-Foot Supersonic Wind Tunnel. Through the years Mr. Smith has worked diligently with trainees instructing them in the use of the various machines and tools in the shop. Mr. Smith is a native of Iowa.

The new Chief of the Transportation Branch is William W. Rodgers, replacing Raymond A. Loucks who retired a month ago. Mr. Rodgers was born and raised in Lodi, California. His interest

in automotive maintenance and transportation stems from the early days when, as a young man, he worked in his father's garage and was taught the trade. During World War II he served with the U.S. Navy in the South Pacific. Following the war he became interested in flying and later qualified for his private pilot's license. Mr. Rodgers came to Ames in 1952, and was assigned first to the 12-Foot Supersonic Wind Tunnel. In 1957 he transferred to Transportation and was named assistant to Mr. Loucks.

In Life Sciences, Dr. Richard S. Young was appointed Chief of the Life Synthesis Branch. Dr. Young transferred to Ames from the Marshall Space Flight Center, Huntsville, Alabama, in 1961. His scientific research is in the field of life sciences and systems. He was born in Southampton, New York, served in the U. S. Navy, and earned his doctorate in biology at Florida State University.

Dr. John R. Spreiter, formerly of the Aero-Thermodynamic Division, transferred to the newly organized Space Sciences Division and is now Chief of the Theoretical Studies Branch. Dr. Spreiter has been with the Center since 1943, coming here from his home in Oak Park, Minnesota. The research scientist received his doctorate degree from Stanford University and has taught special graduate courses there. His work in the physics of the upper atmosphere and solar-terrestrial relations resulted in his selection to attend the 1962 session of the Les Houches Summer School of Theoretical Physics

(Continued on Page 8)

### X-Ray Unit to Visit Area

The Santa Clara County Chestmobile X-Ray Unit will be at the Mountain View Chamber of Commerce Building, 479 Castro Street, on Tuesday October 30, between the hours of 10 a.m. and 12:30 p.m., and 1:30 to 3:30 p.m. Sponsored by the Santa Clara County Tuberculosis Association, the service is offered free of charge.

# FOURTH ANNIVERSARY ISSUE

## Editorial

With this issue we begin the fifth year of The Astrogram's publication. To commemorate the event, a flash-back of the year's happenings at Ames is presented in this issue in a composite picture for the review of our readers.

This bi-weekly publication results from the efforts of many Ames employees, not just one or two. From the Photo Branch gang, Lu Emel and Phyllis Mensor in the office, Ben Shoemaker and his crew in the Process Photography Section, Lee Jones and his photographers, to Willie White, Roger Hernandez and Leo Mauro in Reproduction, all have done their utmost to make each issue of The Astrogram better than the last and a symbol of their creativeness and craftsmanship.

We appreciate, too, the efforts of Ames personnel who have taken the time to let us know of new scientific research projects, the Center's contributions to the space age, social and sports events, and the many other items that have made The Astrogram truly your paper.

The interest of each and every one is gratifying, and as we start another year of publication I would like to take this opportunity to thank them all for their enthusiastic support of The Astrogram.

Dot Evans  
Editor

## NASA Names Dr. Niemann to North Eastern Office

Dr. Fred L. Niemann has been named Assistant Director for Technical Programs in NASA's new North Eastern Office at Cambridge, Massachusetts.

Dr. Niemann, 44, was appointed by North Eastern Office Director Franklin W. Phillips to conduct technical liaison with contractors, research institutions, and other government agencies in New England.

The Office has been established at 30 Memorial Drive, Cambridge.

Dr. Niemann has published numerous technical papers in the fields of physics of metals, microwave, high-energy nuclear physics and particle accelerators.

Since 1956, Dr. Niemann has been associated with various industries in the Boston area in technical marketing and government relations. He joins NASA from the corporate government marketing staff of the Raytheon Company, Lexington, Massachusetts.



HISTORIC MOMENT . . . . With wake churning aft, the destroyer USS Epperson, with Lee Jones aboard, steams toward her position in the MA-8 flight plan. Here, Lee readies his camera to record some of the shipboard activities.

## I Was Almost There

. . . . . by Lee Jones

It was a wonderful experience to participate in the Mercury flight of Walter Schirra, with "cooperation" really hitting me as the key word among all involved branches of the armed services and government agencies.

Departing from Ames, I went to San Diego to attend a briefing with Navy and Mercury Eight photographers. Next stop was the Hawaiian Village in Honolulu for several days (I couldn't help it if there was a delay in the MA-8 flight). Sun, surf, and "moving scenery" was rough duty, but it ended in due time.

Crews were assigned to their ships and off we went for the fourth orbital recovery area near Midway Island.

I drew the destroyer USS Epperson, and a proud ship she was. Espirit de corps of the highest order existed with the officers and men of her crew, in addition to their being a great bunch. Commander T. A. Bush, Jr., skipper of the Epperson, and his officers and men made our tour a real joy.

The mission of the Epperson on MA-8? In the event Wally Schirra terminated his flight after the fourth orbit, we were to effect recovery. The NASA team on board consisted of a medical doctor for de-briefing, engineer, communications

officer, public affairs officer, a McDonnell Aircraft Corp. capsule engineer, and my crew of photographers.

My mission? To take movie and still pictures for documentary and television purposes, and color pictures for engineering data study. We also took footage of the various activities of the ship's crew while conducting simulated capsule recovery runs. And we didn't overlook the boys down in the boiler room! They were a swell gang.

Well, we missed out on the recovery (Dan Wentz over on the carrier Kearsarge had better luck), but the experience was great. As usual, it's good to be home.

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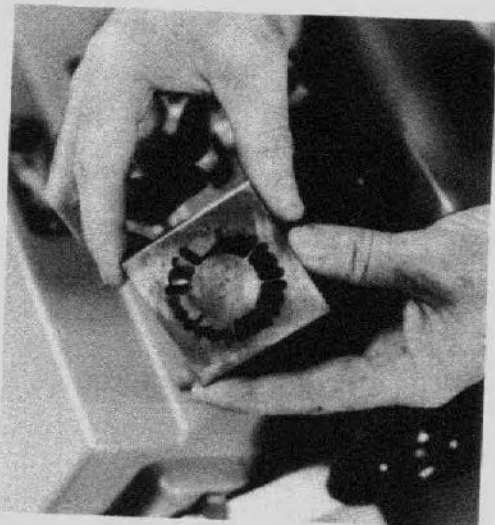
## Automatic Drill Press Added to Machine Branch

Automation came to the Machine Branch recently with the installation of a numerically controlled drilling machine, one of the latest developments in the rapidly changing heavy machine industry.

According to Henry Citti, Chief of the Machine Branch, the potential of this machine, and others like it, is unlimited for research and development projects. In discussing the benefits Mr. Citti said, "Repetitive accuracy and the elimination of the human fatigue factor can greatly increase shop efficiency; however, we will always need skilled craftsmen."

The Tape-O-Matic operates on a principle of automatically controlled "x" and "y" coordinated positions, and the Soroban tape punch is operated by regular shop personnel. Normally, programming will be set up in the shop, but in the case of complicated templates or contours, the computing machine will cut the time required for setting up the coordinates.

A one-time job will be punched on ordinary paper tape, but in the case of standard bolt circles, mylar tapes will



THE RESULT

**AUTOMATION PROVES ITS POINT-** Drilling the thirty-three holes in the pictured flexure pivot normally takes approximately two days. With the numerically controlled drilling machine the same job took 4 minutes, plus 27 minutes for computations. And every hole was exactly the same. The pivot is a duplicate of a portion of a balance to be used to obtain strength information on the actual strain gage balance.

be used. These tapes can be used many times and will result in the establishment of a tape library which will make possible significant man-hour savings in future operations.

"The electrical controls of this machine are truly a marvel of transistorized circuitry with modular construction," Mr. Citti said, "and there are only four varieties of circuit boards in the logic circuit — no moving part to break down, either!"

Other innovations of this machine are an instantaneous push-button zeroing of either or both axes at any point on the table, and a table and carriage which travel on circulating ball bushing ways and lead screws providing maximum accuracy.

Basic programming for the numeric drilling machine is simply a matter of transferring hole center-to-center dimensional data from a blueprint to tape in the proper machining sequence.

Recent estimates indicate that within five years 70 percent of the lathes, milling machines, drilling machines, and the like, in modern shops will be tape controlled. Until recently the cost of the Pratt and Whitney Tape-O-Matic, such as that installed in the Machine Shop,



THE PROCESS

**THE PUSH OF A BUTTON . .** and automation takes over. Here Jim Gabbard (Mach) checks the new Tape-O-Matic Drill Press as the tape machine (right) feeds it programmed instructions. In this final phase of the operation a previously prepared Process Planning Chart provides the necessary commands for the machine in the sequence of operation and is a guide for the operator.

## Ames Airings

..... by Sharon Scharmen

LEO HALL (40x80) spent his vacation in Mexico this year, enjoying the splendors of that country. He visited Mexico City, Acapulco, and Guadalajara; found it very hot and humid but appears ready to return for more sight-seeing. . . . . Joining the throng of bottle-warmers is DAVID HICKEY (40x80) who welcomed a baby boy (the first for the Hickey's) into the world on October 8 . . . . . While shopping around for news in the RFEE Branch, I discovered MERRILL NOURSE attended an antique (wonder how many he bought) show in San Francisco, and JEANNE NEALE had a vacation during which time she bought new dresses, hats, shoes, etc., etc., and now is considered the glamour queen of that branch. . . . . EMILY NEAVES (RFE) is still sighing over the wonderful vacation she and her husband took with some friends last month. Their trip included a visit to the Seattle World's Fair, a fun-filled voyage on the P&O Liner "Orsova" from Vancouver to Honolulu, a 2-week tour of the Hawaiian Islands, and the jet flight back to the mainland. Sounds truly wonderful, Emily. . . . . Want to hear a fishy story? Some of the Ames men chartered a fishing boat on October 17 and really had a day. "DEBBY" DEBEVOISE recounted the trip very descriptively to me over the phone. He said the day was perfect and as they sailed away from Sausalito and looked back, San Francisco appeared to be a "shining jewel in the sky." The weather was superb, the water flat, and the fish were big. Apparently they were big because one weighed 33 lbs! The others caught were 30 lbs., 26 lbs., and 24 lbs. All lovely, mouth-watering salmon. The fellows who enjoyed this fisherman's dream were: DON HUMPAL (Contracting), MARSHALL BIGGS (RFE), JACK BARRIE (RFE), BRUCE TINLING (G&C), ED HOIN (HT), FRED BLUME (Contracting) and "DEBBY" DEBEVOISE (Proc & Sup Div). Believe me, after listening to him describe this fantastic trip, I'm ready to hop into a boat and take off with the rising sun — how about you?

was prohibitive. Now, mass production has changed that, allowing even the small business firm a chance for automation.





## GOLF

..... by Ruth Richardson

The monthly tournament of the Ames Golf Club was held at the Riverside Golf Club on Saturday, October 20. Play for the day was a best ball twosome.

Ruben De Los Santos and Bruce Tinling were first flight winners with a best ball 65 in the first flight; a tie for second place with 67, were the teams of Bill Fietzer-Frank Lazzeroni and Deby DeBevoise-Roy Griffin; third place was Loren Bright and Gordon Taylor with a 69; fourth place at 70 was Otto Meckler and Howard Matthews (those new clubs didn't seem to hurt Howard a bit).

In the second flight Bob Eddy and John Van Etten were first with 65, John Rakich and Bruce Kelley, second with 68; third was a tie between Nobuo Nakamatsu and Jim Bellomo, and Mitch Radoovich and Ernie Medeiros.

Carol Tinling and Jim Silver came in with a best ball 60 to take first place; Herb Pankratz and Joe Quartuccio's 65 was second; Ruth Richardson and Dick Hanly were third with 72; Bill Warren and Kay Bruck were fourth with 76.

The November tournament will be held at the new Santa Teresa course on November 17. Reservations must be in by noon November 12, which is earlier than usual. Tournament committee for November will be Carol and Bruce Tinling, Armando Lopez, and Ruth Richardson. This will be the yearly Turkey tournament.

Your club officers are open to suggestions for a year-end social get together. Give us a call and tell us your likes.

\* \* \*

## Do Your Part Buy Bonds!



## BOWLING

..... by Dee Maines

STRIKE!! that's the word you hear on Thursday evenings at 6:30 p.m. now that the All-Ames Bowling League is under way again for the winter. The season is divided into thirds with the winner of each third meeting in a play-off at the close of the season to determine first, second, and third place teams. Again, there are 12 teams participating (mixed) with five members per team.

Team standings as of October 11, 1962 are:

	Won	Lost
Electrical Services	17	3
C and M Engrs	15	5
Pinbusters	12	8
Electrical	12	8
Honeybuns	11	9
Afterburners	9	11
Shoestrings	9	11
Comets	8	12
SS90	8	12
Striking Dynamos	8	12
Life Sciences	6	14
Orbinauts	5	13

We haven't made TV yet, so why not come to Cherry Bowl and root for your friends and co-workers.

Thursday, October 11 was Carol Tinling's day. Carol and Bruce headed south for a round of golf at Aptos Beach Golf course. On the 165 yard fifth hole, Carol, using a 5 iron off the tee, hit the ball to the green. As it rolled toward the pin "friend husband" shouted "don't go in," but the ball wasn't listening and dropped into the cup for a hole-in-one, Carol's first, and we hope not the last. Congratulations, Carol, from all of us.

The last match of the Handicap Tournament was played last week between Loren Bright and Ruth Richardson on the Almaden Golf course. Through the first nine it was neck to neck and anyone's game. Making the turn Loren's shots were near perfection while Ruth's ball decided it liked the desert (sand traps to you non-golfers) and seemed to find one on each hole. At the finish of number 15 congratulations went to Loren as he closed out yours truly to become champion of the Handicap Tournament. It was a fun tournament all the way and I hope this can be a yearly event.

## Astroventuring...

★ with walt krumm

The Ames Astronomy Club will hold its first observing session of the season at the Ames telescope atop the Space Flight Simulation Laboratory, on Friday, October 26, at 8 p.m.

The group will assemble at the parking lot to the west of the laboratory between 7:45 and 8 p.m. and will proceed to the observing site together.

You may consider yourself a member of the club if you have an interest in the sky and wish to view some of the objects in the heavens. A formal membership list will be prepared at a later date.

A word of caution for observers interested in the Friday night session; don't arrive later than 8 p.m. The door to the laboratory is locked and there may be no one available to open it.

For your interest, Saturn and Jupiter are placed nicely for observation at this time of year. The viewing program will include at least one of each type of object — double stars (Beta Cygni), open clusters (h and Chi Persei), globular clusters (M-15 in Pegasus), gas nebulae (possibly M-17), and galaxies (M-32 in Andromeda).

There will be no moon on the 25th so keep your fingers crossed for a clear, cloudless night. . . . No observing if the sky is overcast.



JIM SILVER WINS FIFTH FLIGHT PLAY-OFF. . . During the monthly tournament at Riverside last Saturday, Jim Silver and Herb Pankratz played off their tie for first place, fifth flight, of the Championship tournament. Jim came out the victor.

## Entry Simulation Top Team In Ames Softball League



ENTRY SIMULATION TEAM . . . Ames Softball League winners, proudly show off their trophy. Team members are, front row (l to r) John Arvesen (ESB), Gary Bowman (3.5-Foot), Dell Williams (ESB); second row (l to r) Dale Frankel (Struct Fab), Jeff Johnson (3.5-Foot), Don Wilson (ESB); third row (l to r) Bob Morris (3.5-Foot), Al Perkins (Struct Fab), Otto Meckler (Struct Fab), Jim Rountree (12-Foot), John Holt (Model Fin), O. B. Ray (Struct Fab) and Jim Park (Struct Fab).

## Earhart Scholarships for 1963-64 Announced

The annual Earhart Scholarships have been announced by Zonta International for the 1963-64 academic year. Grants of \$2,500, awarded to the best qualified women for advanced study in aeronautical sciences, were established by Zonta, an executive women's service organization, as a memorial to Amelia Earhart. The world-famous air pioneer was an active member of Zonta before her disappearance in 1937, in the initial attempt to circle the globe at the equator.

The basic requirement for a scholarship is a bachelor's degree in a science qualifying a candidate for graduate work in aeronautical sciences, plus evidence of exceptional ability and personal character.

Grants may be used in any school offering accredited graduate courses in aeronautical sciences and approved by Zonta International's scholarship committee. Past scholarship winners may apply for renewed grants.

Winners to date have included students from the United States and Canada,

various European countries, as well as Egypt and Formosa. Among this year's group is the first third-time award winner in the history of these scholarships.

Further information may be obtained from Zonta headquarters, 59 East Van Buren Street, Chicago 5, Illinois. Applications must be filed by February 15, 1963.

## R.H. Charles Appointed as a NASA Consultant

The appointment of Robert H. Charles, of St. Louis, Missouri, as a consultant to the Administrator, was announced recently by NASA Headquarters.

Mr. Charles, who is 49, is chairman of the board of Ray-Eye Productions, Inc., of Chicago, Illinois. Prior to February 1960 he served as executive vice president of McDonnell Aircraft Corp., St. Louis, Missouri.

The first major assignment for the new consultant will be the evaluation of procurement concepts and practices of the space agency. An attorney, Mr. Charles is a graduate of Yale University. He is married and has five children.

## SOFTBALL

..... by Bob Nysmith

The Ames Softball League completed its season as Entry Simulation defeated Electrical in the championship game by a score of 9 to 0 behind the no-hit, 15 strike-out pitching of Jim Rountree.

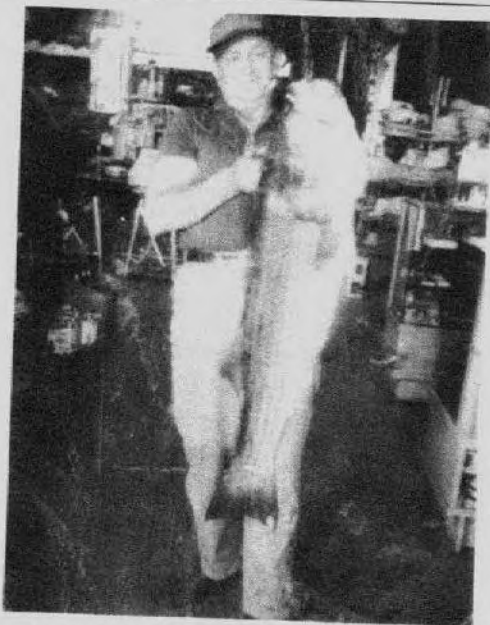
Electrical had previously won the first round of play with a 5-0 record and tied with Entry Simulation in the second round with a 4-1 record. A playoff to determine the second round winner was won by Entry Simulation 2-1 and a championship game between these two teams was required to determine the overall champion.

Competition for the league batting championship was brisk as Bob McCormack of HBR edged Matt Hahne of REE with an average of .441 to Hahne's .440. Jim Monfort of Unitary was a close third with a respectable .433 average.

The final team standings are listed below.

Team	Won	Lost	Av.
Entry Simulation*	9	3	.750
Electrical	9	3	.750
HBR	5	5	.500
Unitary	5	5	.500
Fluid Mechanics	3	7	.300
Res. Equipment Eng'r	1	9	.100

\*Winner in play-off



THE BIG ONE THAT DIDN'T GET AWAY . . . Fred Dietrich (Mach Shop) proudly shows off the striped bass he caught with a pet spoon while trolling the waters near Coyote Point. The vital statistics of this prize are, 46 inches long, weight, 40 pounds. And to keep this fine catch from becoming a victim of the proverbial "fish story" Fred has had it stuffed and mounted for his family room.



HAPPY SMILES ... from Walter and Hazel Quigg as they sample the buffet at the retirement party held recently in Walter's honor. Leroy Monroe (SSS) and his wife (right foreground) wait their turn for the next course.

Honor guest at a recent dinner party was Walter Quigg, Chief of the Simulator and Systems Service Branch, who retired this month after more than 35 years of service. Some 175 friends and business associates gathered at the Palo Alto Elks Club to extend their good wishes for pleasant years ahead.

The Virginia born Quigg has been with NASA and its predecessor organization,

NACA, since 1927. He began his career at Langley Field, Virginia, in March of that year and worked there until his transfer to Ames in 1941. One of the pioneers of the organization, Walter's first assignment here was that of senior airplane mechanic. Within a few short years he was superintendent of flight maintenance and continued to progress as the Center developed.

Walter and his wife, Hazel, have many plans for their retirement years. Foremost on the agenda is the completion of their cabin in Boulder Creek, with time out for an occasional trip. The Quiggs will continue to make their permanent home in Los Altos.

#### RANGER SPACECRAFT (Continued from Page 1)

Sciences said.

The goal of the Ranger series is to produce information about the moon's origin, constitution and surface characteristics as well as information and operating experience that will hasten our progress toward manned lunar flights.

Rangers 10 through 14 will be launched from the Atlantic Missile Range, Cape Canaveral, Florida, by Atlas Agena D Rockets procured from the Air Force under the direction of the NASA Marshall Space Flight Center. Agena D is an improved version of the Lockheed Agena B being used in the current flight series.

The announcement adds a fourth phase to the Ranger project. The first phase included two Ranger research and development vehicles which were launched in August and November 1961.

#### NEW APPOINTMENTS (Continued from Page 1)

at the University of Grenoble in France.

John T. Howe has been appointed Assistant Chief of the Physics Branch. Prior to his new assignment the aerospace engineer was in the Heat Transfer Branch. Mr. Howe came to the Center in 1957 after completing work for his Master's Degree in Engineering at Stanford University, where his thesis dealt with the effect of boundary layer blowing or suction on drag, heat transfer and laminar separation. He was born in Grand Rapids, Michigan.

## Want Ads

For sale — Chevrolet Impala, 1959 4 dr hardtop, R & H, PS & PB. Call Dan Petroff, 241-6018.

For sale — Sofa, 6 1/2 feet long, contemporary. \$30. Call RE 9-8731.

For sale — Stinson Voyager 108-1. Needs work and some parts. Must sell. \$800 or will trade for compact car, up or down. Call Raul Reyes, Hayward 537-5982, or TW 3-5264.

For sale — Lincoln, 1957 Premiere, 2-door hardtop. White. Full power, new double eagle ww tires, new brakes. Call AL 2-2839 after 5 p.m.

For sale — 1961 Ford V-8 deluxe pickup and camper. Pickup has low mileage and camper is only slightly used. Call RE 6-3336 after 5 p.m.

Found — Sharon Coventry silver earring. Being held in the Lost and Found Department, Ames Security Office, Admin. Bldg., ext. 337.

Wanted — Ride from Hamilton and Norma Streets (Campbell area). San Jose. 7:30 to 4:00 shift. Call Pam Nelson, ext. 524, or 377-8737 after 6 p.m.

## Recreation Roundup

..... by Vicki Malatesta

SANTA CLAUS IS COMING TO AMES for the annual Christmas party to be held in the Airplane Hangar and Shops Building on Saturday, December 15, from 10 a.m. to 3 p.m. An invitation is extended to all children of Ames employees to join in the fun of this gala holiday event. Last year 1300 children and 600 adults were on hand for the big day. Arrangements are now being made to select at least 1400 gifts for this year's party. Gifts for children 4 years of age and under will be presented from the Gingerbread House, and the Gift Shoppe will be the setting for gifts distributed to children from 5 to 12 years old. The Balloon Booth will be operating again, — volunteers will be welcome to help blow them up. A feature of the entertainment will be a Rummy Show at 11 a.m. and again at 2 p.m. .... Watch this column for further information on the Christmas party.

THE AMES STAMP AND COIN CLUB meets the first and third Fridays of each month at 7:30 p.m. in the Ames cafeteria. An exhibit by one of the members follows the business meeting. And there is always a door prize. .... Come swap stamps and coins with us.

# NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

# The

# Astrogram

## AMES RESEARCH CENTER, MOFFETT FIELD, CALIFORNIA

VOLUME V

NOVEMBER 8, 1962

NUMBER 2

### Ames Represented at First NASA-University Conference

Fourteen members of the Ames staff participated in the first nation-wide conference of educators and scientists held last week in Chicago to discuss the nation's space program.

Educators representing more than 300 colleges and universities met with scientists from seven major NASA field centers to study the relationship between NASA and educational institutions in meeting national space goals.

Specific purposes of the NASA-University Conference were to inform university administrators of the scope, magnitude and importance of the space program; provide faculty members with an authoritative and up-to-date review of space science and technology; emphasize and outline the growing need for better trained students and higher caliber research; and, motivate universities to take more interest in the upgrading of faculties, curricula and facilities to better meet national goals in space exploration.

Dr. Hugh L. Dryden, Deputy Administrator of NASA, addressed a dinner meeting on the subject of "The Role of the University in Meeting National Goals in Space Exploration".

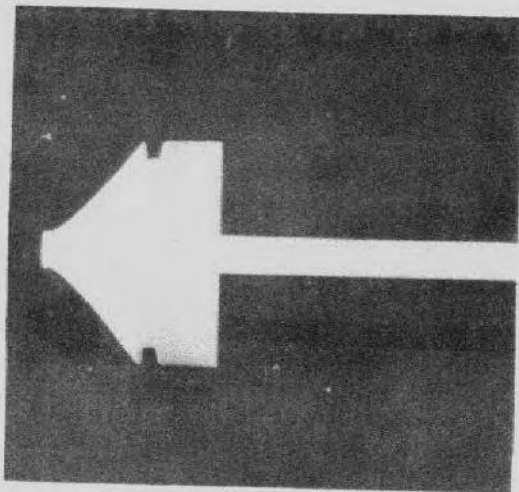
Coordinator for the Ames sessions throughout the three-day conference was Manley J. Hood. Session chairmen were Dr. Alfred J. Eggers, Howard F. Matthews, and Dr. G. Dale Smith. Authors presenting papers were H. Julian Allen, Alvin Seiff, Thomas N. Canning, Glen Goodwin, John D. McLean, Rodney C. Wingrove, Brian F. Doolin, (John V. Foster authored a paper but was unable to attend the conference. Mr. Matthews read it for him), Dr. Richard S. Young, and Dr. Siegfried J. Gerathewohl.

Proceedings will be published to follow.  
(Continued on Page 2)

### H. Julian Allen Proposes New Concept for Shape of Spacecraft of the Future

H. Julian Allen, Assistant Director, last week proposed that interplanetary spacecraft be designed in the shape of a large-angle cone and enter the atmosphere point first. The originator of the blunt shape now standard for space vehicles re-entering the atmosphere from near earth orbit, presented the new concept at the NASA-University Conference in Chicago.

Mr. Allen stated before a gathering of NASA officials and top university personnel from across the nation that "conical bodies deserve consideration because radiation heating increases drastically at the entry speeds involved in interplanetary travel.



SPACECRAFT OF THE FUTURE... as proposed by H. Julian Allen at NASA's University Conference in Chicago last week, probably will resemble this model used for testing shape concepts in a hypersonic wind tunnel. The large-angle cone shape reduces radiation heating, which becomes excessive at speeds to be used during atmosphere entry following interplanetary missions. The rod feeds through the nose of the cone so that the conic shape is retained during ablation.

"Blunt vehicles are desirable when you are dealing with speeds of the sub-orbital range up to speeds required to escape the effects of the earth's gravity," Allen said.

"But when entry speeds exceed this range, as they probably will on return to the earth from trips to other planets, radiation heating drives you away from very blunt bodies, such as the Mercury capsule, to bodies with conical noses."

Expanding on his proposed conical shape, Mr. Allen said, "The idea I am presenting to the university personnel is that phenomena change as air speeds increase.

"At low speeds, a long, slim body is appropriate because drag, not heating, is the major problem. Convective, or frictional, heating is of prime concern when you are dealing with speeds of the order obtained while entering the atmosphere after an orbital or lunar mission.

"But," he continued, "if you merely double, say, Mercury's entry speed, you increase radiative heating, which is negligible at lower speeds, by the 15th power, or about 30,000 times.

"Our concepts of aerodynamic flow, in short, must change as the velocities with which we are dealing increase.

"Here at the University Conference," the noted scientist continued, "we are presenting the problems we face to scientists in the educational world. We hope they will consider these problems and contribute to their solution."

"One problem, for example, which arises when you use the conical nose," Mr. Allen pointed out, "is the flattening of that nose during ablation, or dissipation of the heat shielding material under the intense heat of entry. Because  
(Continued on Page 4)

## Astroventuring... ★ with walt krumm

### KNOW THE MOON

THE WALLED-PLAINS, MOUNTAIN-RINGS, RING-PLAINS and CRATER-PLAINS —these comprise the largest of the peculiar features termed "lunar craters" and so resemble the smaller Maria that the difference is difficult to determine.

The WALLED-PLAINS are the largest of this group and Mare Humboldtianum might well have been included or Grimaldi and Bailly, called seas. Approximately circular areas enclosed by massive discontinuous mountain borders, they vary from 180 miles in diameter to 60 miles and are more numerous in the southeast and southwest quadrants.

The MOUNTAIN-RINGS are smaller than the walled-plains but closely allied. These are encircled by low walls, rarely over 200 feet high. The great ring to the north of Flamsteed is a well-known example.

The RING-PLAINS are circular with continuous walls. A mountain group often occupies the central floor. The walls are crowned by peaks with steeper slopes and interior walls often terraced. Copernicus is the most perfect and magnificent of the isolated ring-plains.

The CRATER-PLAINS are smaller than the ring plains but evince clearer indications of their origin. The walls are lower and the general aspect closely resembles the vast crater-plains on earth.

\* \* \* \*

Our observing sessions at the Ames telescope have met with bad luck weather wise. We will try again — Friday evening, November 16, at 8 p.m. If you still have a desire to do some observing call George DeYoung, ext. 221, or Walt Krumm, ext. 401, the afternoon of the 16th for confirmation of this session.

### KEEP FREEDOM RINGING



BUY U.S. SAVINGS BONDS

## NASA Official Here for Orientation Tour

Dr. Earl P. Stevenson, Chairman of the NASA Industrial Applications Advisory Committee and Consultant to the Administrator, visited Ames recently for an orientation tour of the research facilities.

The visit enabled Dr. Stevenson to acquire first-hand information of the Center's activities as background for his dual role at NASA Headquarters.

Following a discussion with Dr. Smith J. DeFrance, Director, Dr. Stevenson toured the Center with George Edwards, Ames Applications Officer. Of particular interest to him were the innovations that originate from the space effort and have a potential industrial application.

In discussing the Advisory Committee which he heads Dr. Stevenson said, "It will assist NASA management in an organized effort to transfer new scientific and technological knowledge from NASA's research and development program to industry. Further, recommendations of the Committee will be implemented through the Office of Applications created within NASA to identify, document, evaluate, and disseminate innovations having practical application."

Identification and documentation of innovations is underway at each of the NASA Centers. This will provide the information on which the Committee and the Office of Applications will act to effect technological transfers to industry.

The Ames Office of Applications has documented some nine innovations and has many more in the process. During his tour, Dr. Stevenson was able to observe several of these innovations at close range.

Dr. Stevenson, former president and chairman of the board of Arthur D. Little, Inc., engineering and industrial research company of Cambridge, Massachusetts, was appointed chairman of the Advisory Committee last August.

### UNIVERSITY CONFERENCE (Continued from Page 1)

nish a current reference on the state of the art of the national space program.

## Staff Members Receive Length of Service Awards

NASA Length of Service emblems and certificates were presented to Ames employees at the annual ceremony held last Tuesday (October 30) in the Auditorium. One hundred employees with 40, 30, and 20 years of service were honored.

Dr. Smith J. DeFrance, Director, presented 40-year emblems and certificates to George E. Bulifant, Assistant Chief of the Technical Services Division, and John P. Houston, Chief of the Sheetmetal Branch, and a 30-year emblem and certificate to John F. Parsons, Associate Director.

Ninety-seven employees, representing organizations from throughout the Center, were eligible to receive 20-year awards from John F. Parsons, and assistant directors Russell G. Robinson, Arthur B. Freeman, and Dr. Webb Haymaker.

In extending a welcome to the group Miss Helen Davies, Personnel Officer, said, "We are celebrating not only the enviable length of service record of each participant, but the combined record of over 2000 years of service to the Federal Government. . . Your stability and earnest endeavors have created working relationships which have developed a close-knit group of dedicated workers. . . And you have helped to develop pride in service with Ames, NASA, and the Government."

John E. Leveen, Personnel Division, opened the program and introduced the NASA-produced film "Your Share In Space." This film graphically portrays the United States' efforts in space research.

A reception in honor of the recipients was held in the Auditorium following the ceremony.

Pictures of the event are presented on another page of The Astrogram.

### The Astrogram

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Phone 385

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Managing Editor . . . Brad Wilson  
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Deadline for contributions:  
Thursday between publication dates



## Latest Flight Report of Mariner II Spacecraft

The National Aeronautics and Space Administration said the Mariner II spacecraft marked its 65th day of space travel by passing the Earth in its 110-day flight to the planet Venus on Tuesday, October 30. This occurred at 8:00 a.m., EST, when the 447-pound spacecraft was 11.5 million miles from Earth — about half the distance to the orbit of Venus — and traveling at a speed of 70,500 miles per hour in relation to the sun.

Because of the direction of injection, the orbital speed of Mariner II around the sun was less than that of the Earth. Thus, the spacecraft could not maintain an orbit similar to that of the Earth and, because of the sun's gravity, started falling inward toward the orbit of Venus. As it did, the spacecraft's speed in relation to the sun accelerated so that eventually it exceeded the Earth's orbital velocity of about 66,000 miles per hour.

The combination of inward motion toward the orbit of Venus and circular motion around the sun produced the orbit that will enable Mariner II to fly by Venus on December 14.



INVENTION AWARDS . . . for members of the Ames staff were presented by Dr. Smith J. DeFrance (left), Director, at ceremonies held recently. Approved by the NASA Inventions and Contributions Board, the awards totaled over \$1300 and were based on the intangible benefits of the inventions. Here, Albert E. Clark, Jr. (Mod Const), accepts a check for \$900 for inventing a "method of making thin wall metal castings." The other recipients are (second from right) John V. Foster (Guid Sys Comp), who was awarded \$100 for a "Vibrating Reticle Star Tracker," and Vernon L. Rogallo (Meas Res), whose "Propeller Blade Loading Control" was awarded \$50.

## BOWLING

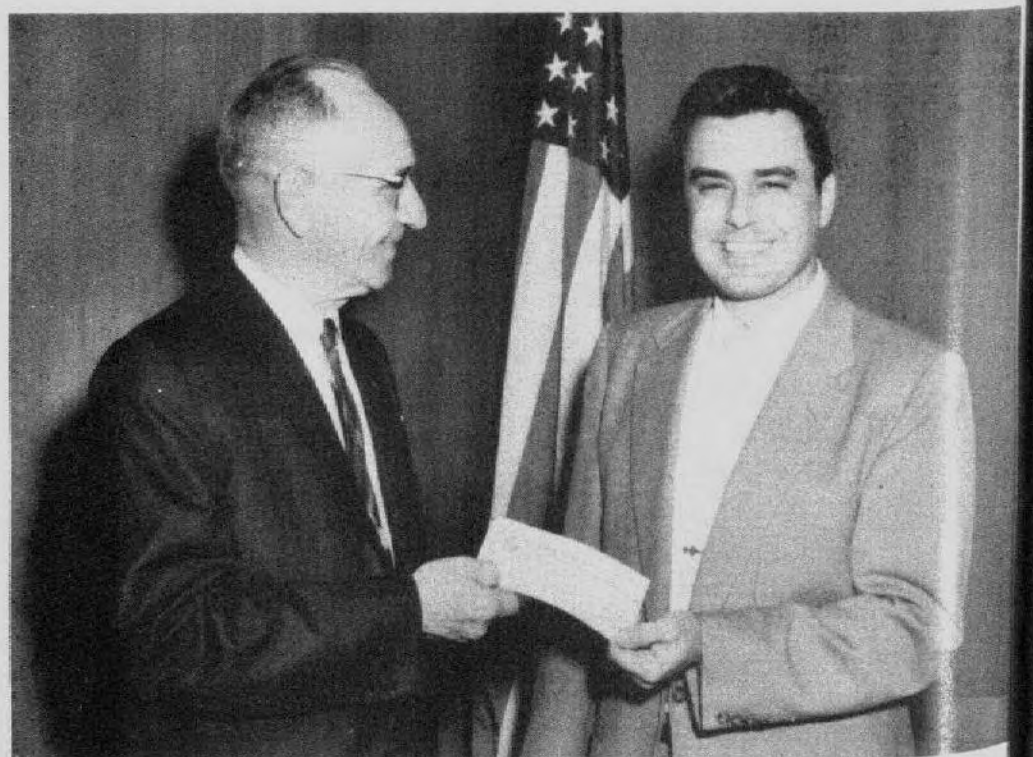
..... by Dee Maines

We are wondering what the magic word is that Electrical Services use to be able to hold the lead in the All-Ames league for eight weeks. How about a hint boys?

Team standings for the first six places as of November 1, are:

	Won	Lost
Electrical Services	26	6
Comets	20	12
Electrical	18	14
Honeybuns	18	14
C and M Engrs.	17	15
Pinbusters	17	15

Outstanding games of the November 1 evening were O. Meckler, 219, C. White, 206, B. Hood, 206, J. Marvin, 203, and D. Jaynes, 201. With eleven 500 series bowled, the first top four for the men were H. Clark, 553, B. Hood, 549, O. Meckler, 543, D. Jaynes, 542, and for the women Janet Konrath rolled a 522.



INVENTION AWARD . . . Joseph R. Smith, Jr., (Human Perf Req) received \$300 award for his invention of a "biomedical amplifier." Mr. Smith missed the first ceremony but Dr. DeFrance made a second presentation at a later date. Mr. Smith is pictured here receiving a check from Dr. DeFrance.

## NASA Co-sponsors Liquid Propulsion Symposium

U. S. rocket scientists and engineers gathered in San Francisco this week to trade information on the free world's most advanced liquid propulsion systems for missiles and space flight.

More than 500 men representing Government and industry teams engaged in rocket development met for the Fourth Annual Liquid Propulsion Symposium in a series of restricted sessions not open to the general public. The conference, styled to permit an exchange of advanced technical know-how between rocket specialists, was sponsored this year by NASA in association with co-sponsors, the Advanced Research Projects Agency (ARPA), and JANAF (Joint Army, Navy, and Air Force).

Thomas F. Dixon, Deputy Associate Administrator for NASA, posed "challenges in rocket propulsion" in a keynote address last Tuesday morning (November 6), and Dr. Joseph Shea, Deputy Director for Systems in NASA's Office of Manned Space Flight, described the United States' "push to the moon" at a luncheon meeting on Wednesday.

During the meeting, about 30 technical papers were given at six formal sessions of the group. A special evening meeting on Tuesday covered new developments in the field of liquid propulsion. Topics covered during the regular sessions include "Propulsion for Space," "New Propulsion Concepts," "Cryogenics," "Propellants and Their Utilization," "Fundamental Engineering," and "Engine Development."

## Recreation Roundup

..... by Vicki Malatesta

AMES BRIDGE CLUB WINNERS on Friday, October 26 were: Luigi Cicolani and John McCloy, first; Mrs. Arthur J. Kaskey and Jessie Gaspar, second; and Alan Levin and George Callas, third.

Winners of the November 2 master-point game were: Mrs. Dwight Moody and Mrs. Robert Spaulding, first; Mr. and Mrs. Edward Collins, second; and Mr. and Mrs. Arthur Kaskey, third.

The Ames Bridge Club boasts some real good players. Come out and see if you can beat them. Friday evenings at 7:30 p.m. in the Ames cafeteria.

## Ames Givers Fund Participation Figures Released

Results of the 1962-63 NASA-Ames Givers campaign to date show 87% participation and contributions totaling \$15,873. The participation percentage dropped slightly from last year but total contributions again set a new high for the Center.

Organization	No. of Employees Pledged	Participation Percentage	Organization	No. of Employees Pledged	Participation Percentage
Office of the Director	20	100%	Personnel Division		
Vehicle Environment Division			Division Office	2	100 %
Division Office	3	100	Employment	11	100
Physics	25	83	Classification	4	100
Entry Simulation	35	90	Train & Transact	7	100
Struct Dynam	25	100	Security & Emp Rel	4	100
3.5-Foot	42	81			
HBR	29	88	Procurement & Supply Division		
Aero-Thermodynamics Division			Division Office	6	100
Division Office	3	100	Contracting	22	100
SSFF	33	73	Cont Admin	9	100
Heat Transfer	43	80	Supply	20	100
Fluid Mech	44	73	Property	6	75
Tri Aero			Technical Services Division		
12-Foot	21	84	SSS	22	100
6 x 6	20	83	Airc Serv	18	90
Theo	17	100	Airc Insp	4	57
Space Sciences Division	1	100	Mach	99	79
Full Scale & Systems Research Division			Mod Const	25	74
Division Office	3	100	Mod Fin	0	0
40 x 80	23	58	Sheetmetal	19	76
FSS	27	84	Struct Fab	41	91
Opr	7	100	Maint	37	88
AFS	20	91	Transportation	10	91
Guid & Cont	24	83	Research Facilities and Equipment Division		
Guid Sys Comp	18	72	Division Office	2	100
Unitary Plan Wind Tunnel Division			RFEE	62	75
Division Office	4	100	REE	31	79
8 x 7	25	81	RFE	29	94
9 x 7	22	100	Photo	20	77
11-Foot	18	86			
Unit Opr	35	88			
Instrumentation Division					
Division Office	3	75			
Meas Res	43	88			
Instr Sys Dev	34	92			
Elec Mach Comp	40	87			
Mech Inst	38	93			
Elec Inst	59	80			
Life Sciences	73	84			
Assistant Director for Administration	4	100			
Administrative Services Division					
Division Office	3	100			
Central Files	9	100			
Communications	9	82			
Library	13	100			
Tech Reports & Steno	13	100			
Reproduction	3	100			
Fiscal Division					
Division Office	3	100			
Accounting	13	81			
Audits & Reports	6	100			
Voucher Processing	19	100			
Mach Tab	9	82			

## Ames Airings

..... by Sharon Scharmen

RALPY IGLER (RFEE) and his wife vacationed in Southern England, Northern France, the Black Forest region of Germany, Western Switzerland, Belgium, and Holland this year. We hear that they brought back a new 1500 Volkswagen which runs beautifully. Not knowing the difference between a "1500" Volks and the regular kind, we suggest you take a ride past the Administration Building, toot the horn, and wave to the Astrogram staff so we can see it, Ralph. . . . A couple of our hardier men are off hunting in Colorado for several days, JACK BONNELL (Supply) and CLEMENT LAMICA, SR. (RFEE). They are supposed to come back with deer. We'll see . . . PLEASE don't forget to send in news to help fill this column. We count on our readers to keep us supplied.

# Personnel-ly Speaking

## THE NEW FEDERAL PAY REFORM ACT — QUESTIONS AND ANSWERS

In response to questions already received on the newly enacted Federal pay legislation, and in anticipation of still further questions, the Civil Service Commission has prepared the following questions and answers for the information and guidance of Federal employees.

1. Q. Why is the new pay law called "salary reform" instead of a "pay raise"?

A. Increasingly over the years, Federal salary systems have failed to meet the needs of the Federal service. President Kennedy has said that Federal employee salaries "should be fixed under well-understood and objective standards, high enough to attract and retain competent personnel, sufficiently flexible to motivate initiative and industry, and comparable with the salaries received by their counterparts in private life. To pay more than this is to be unfair to the taxpayers — to pay less is to degrade the public service and endanger our national security."

2. Q. How does the new pay law measure up to the Presidents's criteria?

A. To meet the President's criteria for a Federal pay system, Public Law 87-793 is based upon the two principles,

- (1) comparability of Federal and private enterprise salaries for the same levels of work, and
- (2) internal alignment that provides equal pay for equal work and pay distinctions in keeping with distinctions in work and performance.

The law provides raises in varying size for employees in the four statutory salary systems affected. Rather than being "just another pay raise," however, revised salary schedules go a long way toward making a reality of the much-needed comparability between public and private salaries. Significantly, the law also established a policy for annual review of salaries to assure continued comparability between public and private salaries.

3. Q. What are the effective dates of the new salary rates?

A. Increases will be in two phases — effective the first pay period after October 11, 1962, (at Ames this was October 14, 1962) and January 1, 1964. The increases were phased over two fiscal years in order to prevent undue budgetary and economic impact in any one year. The first raise is the largest in most grades.

4. Q. What method was used to determine that the new salaries are comparable with salaries in private industry for the same levels of work?

A. Basis for the new salaries is the 1961 survey report of the Bureau of Labor Statistics, which furnished private-enterprise salary information for occupations representative of the Classification Act.

(Next issue: Continuation of questions and answers)

## An Invitation . . .

A retirement party honoring Paul E. Delaplaine (40x80) will be held at the Bradley Cabinet Shop, 618 Minnesota Avenue, San Jose, on Saturday, November 10. An invitation is extended to Mr. Delaplaine's many friends to attend. A social hour, complete with music, will begin at 6 p.m. followed by a barbecue at 7 p.m. (the hosts ask that you bring your own service for eats and drink). For reservations call Tom Seymour, ext. 244.

## GOLF

. . . . . by Ruth Richardson

The annual turkey tournament of the Ames Golf Club will be held at the Santa Teresa Golf Course on Saturday, November 17. Tee-off time has been set for 9:30 a.m. For reservations contact Mitch Radovich, ext. 232, Carol Tinling, ext. 338, Bruce Tinling, ext. 413, Armando Lopez, ext. 221, or Ruth Richardson, ext. 601, before 4 p.m. on November 9.

## Want Ads

For sale — 3-bedroom home, quiet residential neighborhood, 6 years old. Very reasonably priced. Call AL 3-6294.

For sale — Rockholdt boat and trailer, 10 1/2 feet. \$75. Call Harry Zabower, 967-2237.

For sale — Bicycle, girl's 24-inch. Good condition. \$20. Call Dave Magnuson, YO 7-0896.

For sale — Record player. Teletone with hi fidelity speaker. 78-45-33 1/3-16 R.P.M. Suitable for young teenager. \$7. Call 337-0264.

For sale — Norelco floating head electric shaver, like new. 3 months old. \$12.50 or best offer. Call Gordon Patnude, 241-6137.

For sale — Electric train with 2 engines, 1 diesel, the other steam. 2 transformers, 4 cars, steel bridge, tower, tower light, plastic people, houses, telephone poles, shrubbery, tunnel, model cars, graded trestle, tracks, and sheet of 5/8" x 4' x 8' plywood with 2 wooden horses. Asking \$35. Thermix safety heater, ideal for trailers and camping. Made in France. New, never been used. One gallon of fuel. List price \$24. asking \$16. Call Dick Tate, 296-7142.

For sale — German Shepard puppies, 5 months old. 2 males and 2 females left. Call Bev Blanchard, 248-9707 after 5:30 p.m.

Wanted — Locked garage for dead storage of car. Will pay \$7 per month. Phone DA 5-5047.

Wanted — Ride from corner of Bernardo and Remington in Sunnyvale. 7:30 to 4 shift. Call Richard S. Murphy, ext. 565.

Wanted — Car pool from Shoreview, San Mateo. 7:30 to 4 shift. Call Chet Schedlin, ext. 466, or FI 1-7060.

Found — Parker fountain pen in the Ames Library. Owner may claim at the Lost and Found Department, Ames Security Office, Administration Building.

Lost — Books from the Ames Library. *Physical Mathematics* (4986), by Page; *Einführung Function Theory* (3625), by Bieberbach; *Electrical Engineering Circuits* (3497), by Skilling; *Mechanical Measurements by Electrical Means* (2764), by Roberts. Anyone having knowledge of these volumes contact R. E. Posch, ext. 565.

## ALLEN CONCEPT (Continued from Page 1)

it is a cone, the apex, or point, ablates faster than the surrounding surfaces, giving the body a tendency toward bluntness.

"We are not certain," continued Allen, "what is the most effective method of preventing this uneven loss of mass. We, at Ames, have proposed that the conical shape might be retained by releasing a coolant at the tip of the nose at a rate sufficient to offset the difference in ablating rates. This coolant might be a small-diameter rod, a gas, or a liquid."

"Scientists at various universities," Allen concluded, "have an excellent opportunity to contribute solutions in the and countless other areas. I am certain that they will meet the challenge."

## NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

# The

# Astrogram

### AMES RESEARCH CENTER, MOFFETT FIELD, CALIFORNIA

VOLUME V

NOVEMBER 23, 1962

NUMBER 3

### Ames Authorized Funds for Space Research Facilities

Construction of four space research facilities, totaling over \$14 million, has been authorized Ames for Fiscal Year 1963.

The facilities will include a laboratory for biosciences, a space flight guidance facility, which will stimulate missions to the moon and planets, a radiative heat system for the Mass Transfer Facility, and a helium tunnel capable of producing an air flow fifty times faster than the speed of sound.

The bioscience laboratory will provide research facilities for the Center's rapidly expanding life sciences activities. Investigations of basic biological phenomena in space, as well as studies of environmental and bioengineering problems required for manned space flight will be carried out with this in-house capability. Ames scientists will perform studies in the fields of genetics, radiobiology, immunology, the detection of life on other planets, and environmental physiology at the new facility. Its cost is authorized at \$924,000.

Research to obtain the information necessary to the integrated design of the guidance, stabilization, control and crew support systems in advanced manned spacecraft will be conducted in the guidance facility. It will consist of a three-man capsule with appropriate systems and equipment, a combined analog and digital computer, and a rotating centrifuge to drive the capsule. Authorized cost of the facility is \$9,790,000.

The radiative heat system will permit Ames scientists to investigate the intense heating to which a manned vehicle entering the earth's atmosphere from a lunar or interplanetary mission will be subjected. Sections of complete heat

(Continued on Page 2)

### New Cafeteria Opening Next Monday



Official opening date of the Ames Cafeteria has been set for Monday, November 26. With its completion another fine new facility is provided for Ames employees.

According to chef-manager Paul Ginter, he and his staff will be ready to serve the first meal at 6 a.m. on Monday. Serving hours at the new cafeteria will be, breakfast from 6 to 8 a.m., and luncheon from 11:30 a.m. to 1 p.m., five days a week.

Architect Marshall Biggs and engineers Derrill Hansen and Jack Barrie, along with their respective staffs, are responsible for the design of the building as well as the specifications for the building and equipment.

The building was designed with comfort, pleasure and efficiency uppermost in mind. Entrances on two sides of the building make it easily accessible from different areas of the Center.

Indirect lighting, air-conditioning, and background music, to be played during

the dining hours, will lend an atmosphere of relaxed dining for Ames employees.

The furniture selected for the cafeteria is modern in design but highly functional and comfortable.

The serving area is designed for utilization of the "scramble" system. Offering a minimum of delay and maximum efficiency.

In the stainless steel kitchen, hot and cold "pass-through" boxes for prepared foods will keep them moving from the kitchen to serving area. And an equally convenient conveyor belt will take used trays and dishes back to the clean-up area.

All foods, except pastries, will be prepared in the new kitchen where pressure ovens, deep fryers, and griddle ranges assure a variety of entrees.

In discussing the construction of the new cafeteria Marshall Biggs said, "There has been a mutual interest in

(Continued on Page 2)

# Personnel-ly Speaking

## THE NEW FEDERAL PAY REFORM ACT — QUESTIONS AND ANSWERS

The discussion of the questions and answers regarding the new Federal pay reform act continues this week for the information and guidance of Ames employees.

5. Q. Will the yearly review be made in the same way?

A. Yes. The basis will be a Bureau of Labor Statistics survey, which will be made yearly. The yearly review of statutory pay scales is considered to be an important reform. First, it places the review of salaries on a regular, systematic basis. Also, up to now no adequate national salary surveys have been available, and the revision of these pay scales has had to be done with very little fact-finding.

6. Q. Will revisions of the proposed pay scales take place automatically as a result of the BLS findings?

A. No. The results of future annual surveys will be reported to the President, who (after obtaining views of employee organizations) will thereupon make recommendations for any changes he considers necessary and submit them to the Congress. Putting these recommendations into effect will require legislation.

7. Q. In converting a General Schedule employee to the new pay scale, how will it be determined what his rate of pay will be?

A. Employees in grades 4 through 15 will be paid the new rate for the same within-grade step. (For example, a GS-7 receiving \$6345 per annum prior to October 14 was increased to \$6650). Employees in grades 1 through 3 will be paid the new rate for the next higher step. (For example, a GS-3 receiving \$3760 per annum prior to October 14 was increased to \$3925 rather than \$3820).

8. Q. Is a minimum raise provided for an employee who is promoted from one grade to another?

A. Yes. His salary will be increased an amount that is at least the equivalent of two within-grade increases in the grade from which he is promoted. For example, an employee in the 9th rate of GS-6, whose salary is \$6,395 and whose within-grade increases are \$170, would be promoted to a rate in GS-7 that is at least \$340 (twice the \$170 within-grade increase) more than his \$6,395 salary. In this case, the employee would be promoted to the 8th rate in GS-7, \$6,835.

(Next issue: Continuation of questions and answers)

### AMES FUNDS

(Continued from Page 1)

shields, including the ablation material layer, the insulating layer, and the back-up structure will be tested. One-and-one-half million dollars has been authorized for the project.

The new Mach 50 helium tunnel will almost double testing capabilities for fixed models. Present facilities of this type are limited to twenty-six times the speed of sound. The tunnel will be used to compliment the existing hypersonic free-flight facility, which uses gun-launched models to obtain fifty times the speed of sound. Its cost is authorized at \$2,225,000.

### CAFETERIA OPENING

(Continued from Page 1)

this project all the way down the line. Contractor, sub-contractors, and our own craftsmen contributed the 'something' extra to make the cafeteria an efficient and pleasant facility. Our limited budget meant cutting corners in many instances by we are proud of the end result."

Because of its spaciousness, the new facility can handle larger groups with ease, increasing its usefulness for future business and social affairs at the Center.

## H. Julian Allen Honored by American Rocket Society

The highest membership award of the American Rocket Society was conferred last week on H. Julian Allen, Assistant Director.

The Fellow award is granted annually to those who have made "valuable and important engineering or scientific contributions in areas related to rocketry and astronautics and for those who have attained national distinction in their field."

Fellowship is limited to one-tenth of one per cent of the American Rocket Society membership.

One of the nation's most renowned aerospace scientists and the originator of the blunt shapes now standard for atmospheric entry, Mr. Allen recently presented a new concept for the shape of spacecraft at the NASA—University Conference in Chicago. Interplanetary spacecraft of the future may be designed in the shape of a large-angle cone and enter the atmosphere point first.

## GOLF

..... by Ruth Richardson

The annual turkey tournament of the Ames Golf Club was held last Saturday (November 17) at the Santa Teresa Golf Course.

Winners in the first flight were Loren Bright, first, with Larry Graham, Ruben De Los Santos and Dick Petersen tied for second.

Gordon Taylor took first place in the second flight, Howard Matthews, second, and Ernie Muselman, third.

Third Flight winners were Nob Nakamatsu, first, Bruce Kelly, second; Ed Tischler and Vincent Bellomo tied for third.

Bill Warren won top honors in the fourth flight; Chuck Lavarney and Eugene Rizzuti tied for second.

### The Astrogram

Room 108  
Administration Building  
Phone 385

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Managing Editor . . . . Brad Wilson  
Editor . . . . . Dot Evans  
Reporters . . . . . NASA Employees

Deadline for contributions:  
Thursday between publication dates

## Ames Airings

..... by Sharon Scharmen

Two hearty hunters home from the hills of Colorado are FRANK CENTOLANZI and LEW ANDERSON (EM) who brought back three deer, one a trophy six-pointer. They enjoyed balmy Indian summer weather during the two-week camp out in the beautiful Colorado Rocky Mountains. . . . WINNIE & RALPH MALLOY (Comm. and Trans.) are the proud parents of a baby girl born on October 29. They named her Luana Denise, and she weighed in at a dainty 6 lbs., 1 oz. . . . The Astrogram office was brightened by good news last week when we heard that Cupid had scored another victory again between two of our Ames employees. Engaged to be married are SOPHIE BLOOM (Env. Bio.) and EMERSON SHAW (Photo). Rumor has it that the date is to be this Thanksgiving week end. We wish both years of happiness.



GUEST OF HONOR . . . at a farewell luncheon given by the Machine Branch was Roger Peterson (left), who transferred recently to the NASA Manned Spacecraft Center at Houston, Texas. Henry Citti, (seated to the right), branch chief, commended him on his 17 years of service with Ames and expressed the good wishes of his fellow employees. Mr. Peterson is pictured here receiving a gift from Harry Stefani.

## Recreation Roundup

..... by Vicki Malatesta

"Deck the halls with boughs of holly," will ring throughout the Center on Friday, December 21, when the Ames Chorus presents the annual program of favorite Christmas carols.

The chorus director has extended an invitation to all Ames personnel who may wish to take part in this holiday song festival. Interested personnel may get details from Bill Houck or Frank Cota, ext. 230.

\* \* \* \*

The bridge winners for November 9, were: Ron Kauffman and Alan Levin, first; Art Kaskey and Frank Steinle, second; and Mrs. A. J. Kaskey and Kay Bruck, third.

Winners on November 16, were: Mr. and Mrs. Dwight Moody, first; Mr. and Mrs. Edward Collins, and Mr. and Mrs. Robert Spaulding tied for second and third.

The Ames Bridge Club members have decided that Friday evening is not our best night for bridge. Another vote this week will determine whether play will be Wednesday or Thursday evening. We are trying to include as many of the Ames families as possible in our bridge group. If you don't get a ballot to vote, call or write Art Kaskey, ext. 224, 258, or 221, and specify which evening you prefer.

## NASA Management Structure Realigned

In a move aimed at adapting NASA's management structure to the agency's rapid growth, Associate Administrator Robert C. Seamans, Jr., recently named a second deputy associate administrator and realigned functions within his office.

Effective immediately, D. Brainerd Holmes assumes new duties as a deputy associate administrator to Seamans as well as retaining his program responsibilities as director of the Office of Manned Space Flight.

At the same time, Thomas F. Dixon, who for the past year has served as deputy associate administrator, assumes specific responsibility for NASA headquarters' relations with field centers engaged principally in other than manned space flight projects.

Previously most field center directors reported directly to Seamans on institutional matters beyond program and contractual administration. Under the new setup, centers reporting on their institutional operations directly to Holmes will include Marshall Space Flight Center, Huntsville, Ala.; Manned Spacecraft Center, Houston, Texas; and Launch Operations Center, Cape Canaveral, Florida.

Dixon's area will embrace operations at Ames Research Center, Moffett Field, California; Lewis Research Center, Cleveland, Ohio; Langley Research Center, Hampton, Va.; Goddard Space Flight Center, Greenbelt, Md.; Flight Research Center, Edwards, California; Jet Propulsion Laboratory, Pasadena, California and Wallops Station, Wallops Island, Va.

## BOWLING

..... by Dee Maines

With only one night left in the first third, Electrical Services has first place sewed up. Second and third are still being fought for. Someone must have overheard the magic word Electrical Services use because they dropped four games to the Shoestrings. How does it feel to lose boys? Team standings for the first six places as of November 15, are:

	Won	Lost
Electrical Services	29	11
Comets	23	17
Honeybums	22	18
Shoestrings	22	18
C and M Engrs.	21	19
SS90	21	19

Star bowler of the night was D. Jaynes who rolled a 202, 211 and a 202 to come out with a 615 scratch series. Eleven 500 series were bowled again the night of November 15. Top six are B. Bruns, 570, J. Sheffer, 562, W. Thompson, 541, G. Bowman, 530, H. Lagergren, 524, and J. Marvin, 524.

## Zerox Machine...

Anyone having occasion to use the Zerox machine in the 3.5-Foot Building, is requested to attend a meeting at 10 a.m., November 29, in the "Zerox Room."

With the many personnel using this machine improperly, difficulties have been encountered. The Zerox representative will be present to give instructions in the use of this machine.

The meeting includes all personnel who may have used the "3.5ft" Zerox to date and/or may be using it in the future.



THE NEW CAFETERIA. . . as a pleasant spot for lunch can be testified to by this group who toured the facility prior to opening day. Seated (l to r) Carolyn Emory (Train and Transact), Clarence L. Snyder, (Airc Serv), Howard Frazee (Res Fac Elec Eng), Ralph Maines (Security & Empl Rel), John McLaughlin (Train and Transact), and George Falkenthal (Res Fac Elec Eng).

## Veteran Employee Paul E. Delaplaine to Retire



"There is never a dull moment around here. Something new and different all the time, and that's the way it has been for me for the past 15 years," said Paul E. Delaplaine as he discussed his work as a mechanic in the 40-by 80-Foot Wind Tunnel prior to his retirement.

The veteran employee came to the Center in 1947, and now, at the age of 72, he will be retired at the end of the month.

Mr. Delaplaine first became interested in Ames when, as an employee of a local steel company, he worked on the movable floor in the 40-by 80-Foot Wind Tunnel. This led him to apply for a job here. He was accepted, and for the first five years was assigned to work in the low density test tunnel. For the past 10

years he has worked in the 40-by 80-wind tunnel.

"I always like to be doing something, whether at home or at work," Mr. Delaplaine said with just pride. "No sitting around doing nothing!"

Apparently this was especially true when he was a young man. One experience he recounted with relish was a high dive he made from a 124-foot span. This dare-devil feat from a Missouri bridge might have ended in disaster. It didn't, instead, it led to a job as swimming instructor, diving and swimming exhibitions, and a 3000-mile swim from Kansas City to New Orleans. The swim took two months for the 17-year-old Paul Delaplaine and a friend with whom he took turns rowing their small boat. The swimmers believed in a good night's rest, so the hours of darkness found them camped along the shore. He continued swimming and diving exhibitions as a hobby until 1935, when diving injuries forced him to give it up.

Mr. Delaplaine brought his family to California in 1925, and settled in San Jose.

He was an early flying enthusiast and in 1928 became charter member number 78 of the San Jose Flying Club. President of the club at the time was flying ace, Bob Fowler. The group built their own plane and flew it extensively in this area.

## Want Ads

For sale — Afghan, several crocheted pillow cases, knit tablecloth, crocheted tablecloth. Call F.A. Lazzaroni, 248-0446.

For sale — Mercedes-Benz, 2-dr, 1956, steel blue, fine condition. \$1450. Call Genevieve Ziegler, 252-1102, after 5 p.m.

For sale — 1960 Alfa Romeo Veloce Coupe, white with red/gray interior. \$2500. Call 793-0298 after 5:30 p.m.

For sale — Pair Wellington boot safety shoes, new, never been worn. Size 8 1/2 D. New price \$11.60, will sell for \$7.00. Call Gus Azzarello, 295-0178.

For sale — 24" Dumont TV set. New tube, excellent condition. Maple cabinet. Make offer. Call Reed-Selth, ES 7-5539.

Wanted — Plans are in the making for forming a 10-share 170 Flying Club at Ames. If you are interested contact Tom Edwards, ext. 561, for arrangements to see aircraft.

For sale — 1961 Sprite, excellent condition. Take over payments or pay balance of \$1495. Call Barbara Raines after 4:30 at 967-5819.

For sale — Principles of Modern Physics, Leighton. Contact Ed Crimmins, 761 Hope Street, Mountain View.

For sale — If the gentleman who purchased a Solar enlarger about a year ago would like to have a 35 mm negative holder, please call Harry E. Blomquist (Photo) 252-6229.

For sale — Girl's bicycle, 26", almost new. Call W.E. Kyle at 255-2099 after 5:00 p.m.

For sale — Wedgewood-Holly 30" gas stove, yellow. 1960 model, good condition. \$85. Call J. D. Magarian, CH 3-5194, Santa Clara.

For sale — 1959 Volkswagen, black sunroof. Call Jim Biggers, YO 8-8286.

For sale — 1960 beige Peugeot, excellent condition, all extras, good WSW tires, front seat belts. Call Helen Jew, CY 4-4380 between 6-7 p.m.

For sale — Ladies hand knit one piece dress. Size 14, never worn. Nylon yarn, natural leather (beige) ribbed skirt, plain knit top with round neck. Long sleeves. \$25. Call San Jose 377-0264.

For sale — Girl's 24" bicycle. Cyclia-3 speed. Good condition. \$18. Call Larry Evans, San Jose 377-0264.

For sale — Mercury, 2-dr hardtop, 1952. \$65. Also, 1947 Dodge, 2-seater coupe, runs good. Contact John Sullivan, 115 South 14th Street, San Jose.

Mr. Delaplaine retires at the end of the month but the Delaplaine family will continue to be represented at Ames by his son, William, and nephew, Robert. Other members of his family include Paul, Jr., an engineer at North American Aviation in Southern California, and over in Bisbee, Arizona, his daughter and her husband, who publish the local newspaper.

Visiting members of his family will keep Mr. Delaplaine busy, as will the new International Harvester sports wagon he bought recently. He has it fitted for camping in his favorite fishing areas. All of his many friends wish him well and hope he catches only the big ones.

# NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

# The

# Astrogram

## AMES RESEARCH CENTER, MOFFETT FIELD, CALIFORNIA

VOLUME V

DECEMBER 6, 1962

NUMBER 4

### Mission of Space Sciences Division is Outlined

The Space Sciences Division, which has been formed at Ames, will conduct research for the nation's space program in the areas of geophysics, interplanetary and planetary physics, planetary sciences, astronomy, and astrophysics.

Headed by Dr. Charles P. Sonnett, who came to the Center from NASA Headquarters in Washington D. C., the division has four branches in support of its mission. They are:

Electrodynamics Branch for the study of problems in cosmic electricity, electrical currents, magnetic fields, flow of ionized gas in space, geo-magnetic storms, aurora, solar flares, and solar winds.

Planetary Sciences Branch, which will study the composition and physical parameters of planetary atmosphere by means of ultra-violet and infra red spectroscopy. It will also conduct a laboratory program to identify molecular gases in planetary atmospheres.

Theoretical Studies Branch, which will conduct theoretical investigations in areas associated with the space science experimental programs.

Engineering Branch, which will be responsible for the development of instrumentation for space experiments, and the engineering and coordination of experiments on spacecraft.

With the Christmas season fast approaching, the Post Office Department is urging the public to mail early. Airmail parcel post being sent to arm-services personnel stationed overseas should be mailed before December 1 to assure delivery by Christmas. Moffett Field Post Office hours are 7:45 a.m. to 5 p.m., Monday thru Friday. Acting Postmaster, Moffett Field

### Lunar Landing Flying Simulator Currently Performing Research Missions at Ames

A lunar landing flying simulator to conduct research for the nation's manned exploration of the moon and planets is now performing flight missions at Ames.

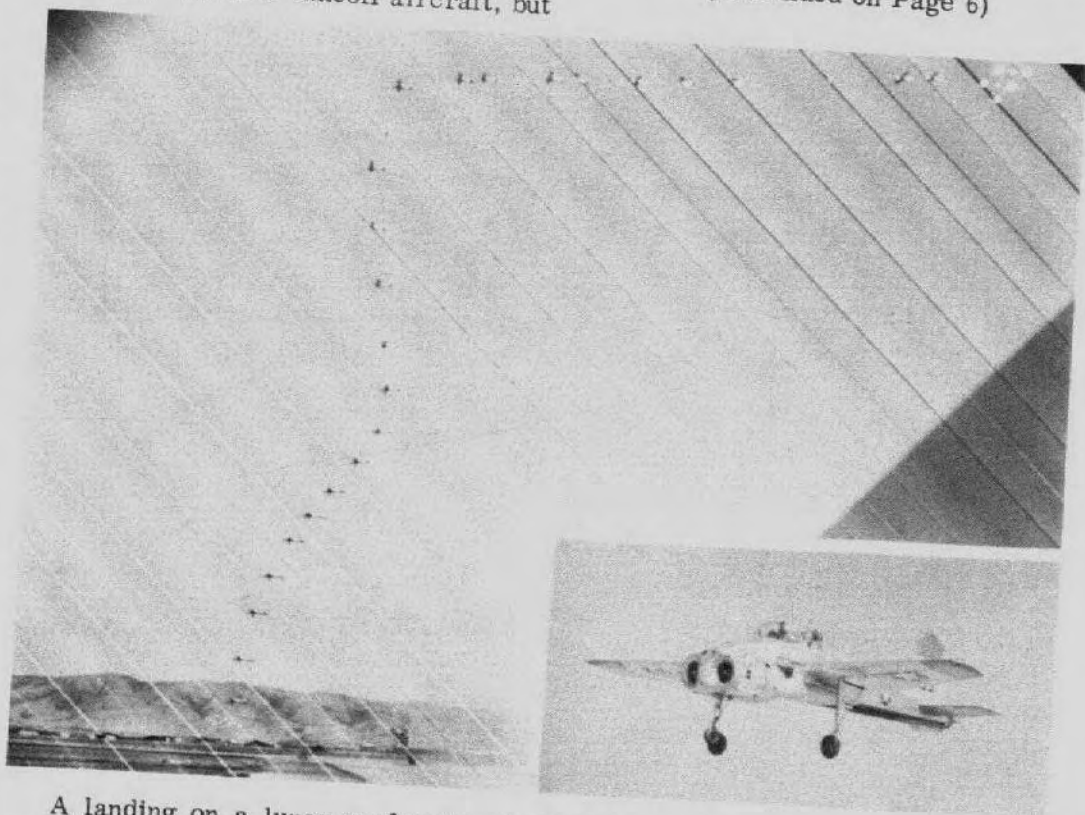
Adapted from the jet-powered Bell X-14A vertical takeoff and landing aircraft (VTOL), the simulator is the only flying vehicle in the country capable of approximating lunar landing power and spacecraft control conditions.

"This is an excellent example of how we are often able to benefit space research programs from aeronautical research," stated Dr. Smith J. DeFrance, Director. "The power and control concept employed in the X-14A was originally being researched for its application to vertical takeoff aircraft, but

when we investigated the potential of the X-14A as a lunar landing simulator and came up with good results, we realized we were getting a valuable bonus effect."

The lack of atmosphere at the lunar surface precludes the use of wing and tail section control surfaces. Although the X-14A has such control surfaces for conventional flight, it is also equipped with jet reaction nozzles for the control of roll, pitch, and yaw. The same type of control system is used on the Mercury capsules during their earth orbital flights, and on the X-15 rocket planes for control at their higher operating altitudes. Energy for the jet reaction

(Continued on Page 6)



A landing on a lunar surface is simulated above by the Center's Bell X-14A vertical takeoff and landing aircraft, flown by Fred Drinkwater. Photographed by a Fairchild flight data analyzer camera, the X-14A approaches its pre-determined landing point from the right at 1,000 feet altitude.

## Astroventuring... ★ with walt krumm

### VENUS

Venus commands a prominent place in the sky during the coming weeks. After passing inferior conjunction on November 12, where it was between us and the sun, Venus became a morning object. This is the "Morning Star" of the poets, so, look for it in the southeast just before sunrise.

On December 14, the Mariner Spacecraft, launched last August from Cape Canaveral, will pass close to Venus on its heliocentric orbit. At this time the spacecraft will be only 21,000 miles from Venus and will transmit data to us. From the data we hope to learn more of the temperatures and elements of the planet.

Venus reaches maximum brilliance on December 19, at magnitude -4.4. This is the position of the planet where distance and phase balance to give the greatest brilliance. If you observe Venus with some magnification at this time, it will appear as a thin 4-day crescent. If it was closer, the planet would appear larger, however, the crescent is smaller and consequently the brilliance is less.

If you wish to see Venus in the daytime — and this is possible at greatest brilliance — start looking at dawn and observe its position. Then follow its path thru the sky after sunup. You will be able to see Venus, if you haven't lost its position.

Venus reaches quadrature in January when the planet is at its greatest elongation from the sun. The Earth-Venus-Sun angle is 90 degrees at this time and Venus appears as a half moon.

## Mariner II Sets Record

Mariner II set the world's long distance communications record on November 25 when it sent back data from 22.5 million miles in space.

Engineers at NASA's Jet Propulsion Laboratory said the record-breaking Mariner II signal was of excellent quality and contained good data on the four scientific experiments in operation.

Pioneer V broadcast usable scientific data out to 17.7 million miles, and sent its last signal, reporting only its position, from 22.5 million miles away.

Mariner II is now expected to pass within 21,000 miles of Venus on December 14.

## NASA to Use Dirigible Hangar at Moffett For RIFT Program

The dirigible hangar at NAS Moffett Field will be used for manufacture and assembly of NASA's RIFT (Reactor in Flight Test) nuclear rocket stage.

RIFT, now in an early design phase, will be used to flight test NERVA (Nuclear Engine for Rocket Vehicle Applications).

The huge steel Navy hangar, built early in the 1930's, will be renovated and converted to an assembly plant for about \$10 million, or one-third the cost of a comparable new facility. Located about two miles from Lockheed Missiles and Space Co., the RIFT prime contractor, it will require that organization to provide less extensive facilities for fabrication work on the stage.

The RIFT stage will be 33 feet in diameter and 88 feet in length. It will flight test the NERVA rocket engine which will use liquid hydrogen as a propellant. RIFT will be flight tested in the 1967-68 period as the top stage of the Advanced Saturn (C-5) rocket.

The renovated hangar will provide space for assembly support, final assembly and reliability testing in addition to major component manufacture and assembly. Cryogenic flow and hydrostatic test facilities will be built near the fabrication area.

Eventually some 1200 persons will be employed in the hangar which measures 1100 feet long, 300 feet wide and 195 feet tall.

Overall management of RIFT is under the Nuclear Systems Office in the Office of Advanced Research and Technology, NASA Headquarters. The Marshall Space Flight Center is responsible for technical direction. Development of the NERVA engine is a joint NASA/Atomic Energy Commission project directed by the NASA/AEC Space Nuclear Propulsion Office.

## Christmas Party to be Held on Dec. 1

### Santa Due Next Week

Santa Claus will arrive for the annual Ames Christmas party a week earlier than usual this year. The traditional holiday event for the children of Ames employees will take place on Saturday, December 15, from 10 a.m. to 3 p.m. at the Airplane Hangar and Shop.

Old Santa and his helpers have arranged a gala program for the more than 1300 kiddies expected to attend, and they promise gifts and fun for all.

The day's entertainment will include a Kiddy Show at 11 a.m. and 2:15 p.m. with performances by talented young dancers from the Frederick and Astaire Dance Studios of San Jose and San Clara, and a program of favorite Christmas carols sung by the Ames Chorus Group at 2 p.m.

For the older children there will be a static display of space exhibits. Among them will be the mockup of the NASA Apollo capsule, the 1/3-scale model of the Mercury capsule, and the analog computer display.

Because an earlier date was set for the party, time does not permit setting up arrangements for the annual Tinkerbell Contest. However, Joann Jackson, Miss Tinkerbell of 1961, has offered to play the good fairy and will give out candy canes to the little ones again this year.

The gingerbread house, with all of its fancy trimmings, will be the distribution point for gifts for children 4 years of age and under. Gifts for children from 5 to 12 years old will be presented from the Gift Shoppe.

The Ames Gate will be open the day of the party and the Recreation Committee strongly recommends the use of that entrance. Toyland soldiers will point the way to the party area.

Subscription tickets for Ames employees are on sale now at one dollar each. They may be purchased through branch representatives or members of Santa's committee. Admission for adults without a ticket is 25¢. Children with reservation cards, free admission. Children without reservations, 50 cent each.

Santa's Helpers for the 1962 Christmas party are: Hy Zimmer, Chairman; Wilfred Minkus, ticket sales; Roy Kaufman, Goody Booth; Vicki Maestas, Gift Shoppe and Gingerbread House; Jim Patterson, Balloon Booth; Bur Skov, Santa's airplane; and Frank Atcheson, Kiddie Show.

### The

### Astrogram

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Phone 385

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Managing Editor . . . . Brad Wilson  
Editor . . . . . Dot Evans  
Reporters . . . . . NASA Employees

Deadline for contributions:  
Thursday between publication dates

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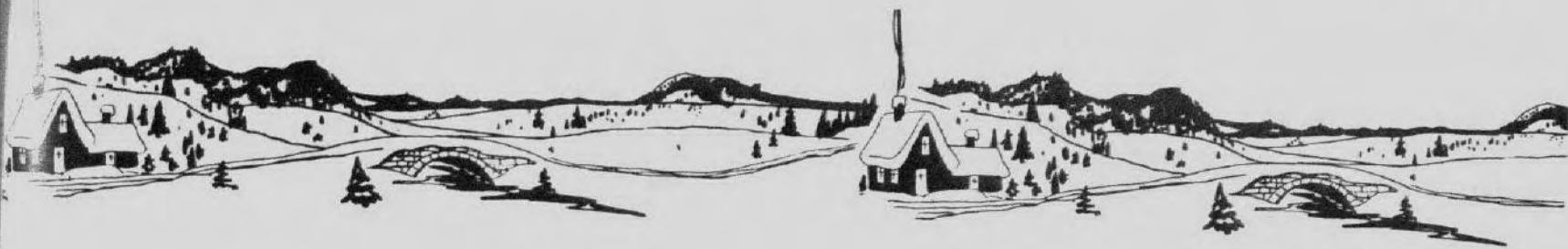
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# Ames 1962 annual christmas party



SATURDAY, DECEMBER 15, 1962 - 10 a.m. to 3 p.m.

## Personnel-ly Speaking

The discussion of the questions and answers regarding the new Federal pay reform act continues this week for the information and guidance of Ames employees.

9. Q. The new law provides that an employee will receive on promotion an increase equivalent to at least two within-grade increases in the grade from which he is promoted. What size increase would an employee receive when promoted from grade 3, where the within-grade rates are not all equal?

A. To meet this special situation, employees in grade 3 at the time of promotion receive a minimum of two within-grade increases in the following way: (1) employees in rates 1 through 4 — \$210; (2) employees in rate 5 — \$215; (3) employees in rate 6 — \$235; (4) employees in rate 7 or above — \$250.

10. Q. Does the pay reform law continue to provide longevity rates?

A. In effect, yes, although they are not so named. Instead of 7 rates to the top of the grade in GS-1 through GS-10 and then 3 longevity rates, for example, the new law provides 10 regular rates. This eliminates the requirement for 10 years in grade in order to be entitled to the first longevity rate, a provision that caused inequities to employees who, on promotion, entered a grade at the intermediate step.

11. Q. How about employees who had been in the seventh rate of the grade for a long time but who were prevented from getting longevity rates because they had been in the grade for less than 10 years?

A. They will be converted to the corresponding rate, and then their time in the 7th rate will be applied toward the time requirement for the next rate. For example, a person who had served 4 years in the top (seventh) rate of GS-5 will be put in the 7th rate of the new grade 5, then moved to the 8th because he had served the 3-year service requirement for that rate. However, the extra year will not count toward his 3 years for moving up to the 9th rate.

12. Q. How would the conversion affect employees in grades GS-12 to GS-17 who under the former system served 18 months in order to earn an increase?

A. They too will be put in the corresponding rates. For example, a GS-12 employee in the 2d rate will be converted to the 2d rate. If he has already served at least a year at the 2d rate, he will be moved automatically to the 3d rate. However, if he has already served less than a year, his conversion will be to the 2d rate and, upon conversion, he will continue serving his 1-year requirement for the 3d rate.

(Next issue: Continuation of questions and answers)

## NASA Studying 1.5 Million Pound Thrust Engines

NASA is studying large liquid rocket engines beyond the 1.5 million thrust of the F-1 engine.

Deputy Associate Administrator Thomas F. Dixon made the announcement recently at the Liquid Propulsion Symposium in San Francisco.

Dixon, speaking of future challenges in rocket propulsion said there is a great need for "new and imaginative approaches for propulsion in the future, if we are to carry very large manned payloads to the planets.

"We need these approaches for more

advanced engines that could give our country launch vehicles with 20-30 million pounds of thrust. NASA will emphasize advanced research that could culminate in the development of these giant engines for the future."

He noted that it takes 8 to 10 years to bring a large rocket engine from concept to flight readiness in a large booster for manned flight. A number of research projects are already under way in NASA's propulsion program and are making progress. "These studies will assess current work on advanced propulsion concepts and point out areas where new concepts need to be investigated," he added.

## GOLF

by Ruth Richardson

The Ames Golf Club awards a Verdon Trophy each year to the golfer with low score in six out of ten tournaments. Winner this year was Sam Pitts with a 68.2. Giving him stiff competition for this perpetual trophy were Otto Meckler, 69.7, "Debby" DeBevois, 69.8, Russ Fahey, 70.2, and Dick Petersen, 70.3.

Jim Nelan was the trophy winner in 1960, and Frank Lazzeroni was low man in 1961.

The annual election of officers will be held in the new cafeteria on Monday, December 10, at 7:30 p.m. Following the business meeting there will be a golf movie and refreshments.

## Japan to Cooperate in Testing of Communications Satellites

The National Aeronautics and Space Administration and the Japanese Ministry of Posts and Telecommunications recently signed a Memorandum of Understanding in which both agencies agreed to cooperate in the testing of experimental communications satellites launched by NASA.

Under the agreement, the Japanese Ministry will make available a ground station with capability for communication by means of artificial satellites. NASA will arrange, to the extent it is technically feasible, for use of experimental communications satellites locally by Japan as well as on a joint basis. An exchange of notes between the United States and Japan has confirmed the Memorandum of Understanding.

Transmissions over the satellite links in the cooperative program are to be used for test purposes only and are not for commercial exploitation. The two cooperating agencies, however, will use their best efforts to arrange for demonstrations of telephone, radio, television and wire photo through domestic tele-communications networks.

The Memorandum calls for an exchange of scientific information relating to the tests and provides that each agency will designate a central point for continuing technical liaison with each other. Since each of the agencies will defray all the cost of their respective activities, no exchange of funds between them is contemplated.

# Ames Airings

..... by Sharon Scharmen

Protesting that he is too young to be a grandfather (and we agree) is CLYDE WILSON (3.5). Nevertheless, Clyde is quite proud of his new granddaughter who was born on November 6 to JANE WILSON KOIVISTO (formerly of the 40x 80). Ellen Jane tipped the scales at a healthy 9 lbs., 14 oz. Another interesting note on this blessed event is the fact that she was born on election night. While Clyde's family was trying to watch the election results and check with the hospital on Jane, the family dog decided to bring 10 puppies into the world. It must have been an exciting night around the Wilson household. .... LU EMEL (Photo) is back after a six-week siege of mononucleosis. We are happy to have her back and well .... BILL CARLSON, who is transferring from the RFEE Branch to the new Space Sciences Division, was honored at a luncheon given him at the Villa Lafayette by his many friends from the RFEE Branch and around the field. Emily Neves and Jeanne Neale are in mourning. After all, Bill always furnished mistletoe at Christmas time! The following poem by Joe Auby best describe Bill's many accomplishments.

O Carlson, Bill Carlson, we're moved  
to see you go  
We've loved you every moment and  
wanted you to know.  
Your many friends assembled here,  
attest your winning charm  
Proof enough we understand, you never  
meant us harm.  
You blew up our machinery, flashed  
wild arcs past our ears,  
Too eager triggered the wrong buttons,  
drove maintenance men to tears.  
While still in one piece, our glass we  
fill  
Toast you farewell — Space needs  
you, Bill!

## NASA Astronaut Flights

Dates to Remember

May 5, 1961 — Alan B. Shepard  
July 21, 1961 — Virgil I. Grissom  
February 20, 1962 — John H. Glenn, Jr.  
May 24, 1962 — M. Scott Carpenter  
October 3, 1962 — Walter M. Schirra, Jr.

## BASKETBALL

Organization of the Ames Basketball League for the 1962-63 season is now underway. The first practice session was held last Monday night (December 3) at the Palo Alto High School Gymnasium. And practice for Section, Branch, or Division teams will be held there each succeeding Monday night until the holidays.

All Ames employees are invited to participate in this competitive sport. A small fee will be required to help defray costs. The exact amount will be determined by League Officials following a formal meeting to be held at a later date.

Full League play will begin January 7, 1963. Games are tentatively scheduled for 7 p.m. and 8 p.m. each Monday evening.

Call Dick Peterson, ext. 401, or Harry DeVoto, ext. 235, to register the team you propose to field. Interested players without a team affiliation may register as an independent seeking a spot on one of the teams. In any event, why not attend the practice sessions and get acquainted?

The Palo Alto High School is located on El Camino opposite the Stanford Stadium.



TWO AMES BRIDGE CLUB PLAYERS, Alan Levin (left) and Ron Kauffman (right) (8x7), did themselves proud recently when they won a resounding first in the San Jose City College Junior Pairs of the Santa Clara Fall Sectional, held in Los Gatos. The following evening they placed fourth against tough competition in the Sunnyvale pairs match to win 1/4 of a Master Point each.

## BOWLING

Page 5

..... by Dee Maines

The first third of the All-Ames league ended on Thursday, November 29, with Electrical Services holding first place.

Team standings as of November 29, are:

	Won	Lost
Electrical Services	30	14
Comets	27	17
Honeybuns	25	19
Shoestrings	25	19
SS90	24	20
Pinbusters	23	21
C and M Engrs	22	22
Electrical	22	22
Life Sciences	17	27
Striking Dynamos	17	27
Afterburners	16	28
Orbinauts	16	28

Outstanding games of the evening were B. Meyer, 246; N. Barsi, 210, and C. Madison, 201. Eight 500 series were bowled with J. Marvin having the highest with a 533, C. Madison, 514, D. Norman, 514, B. Meyer, 510, F. Dowell, 509, R. Redmond, 509, C. White, 502 and J. Barrie, 500.

Here's hoping the second third will be better for all of us.

## Recreation Roundup

..... by Vicki Malatesta

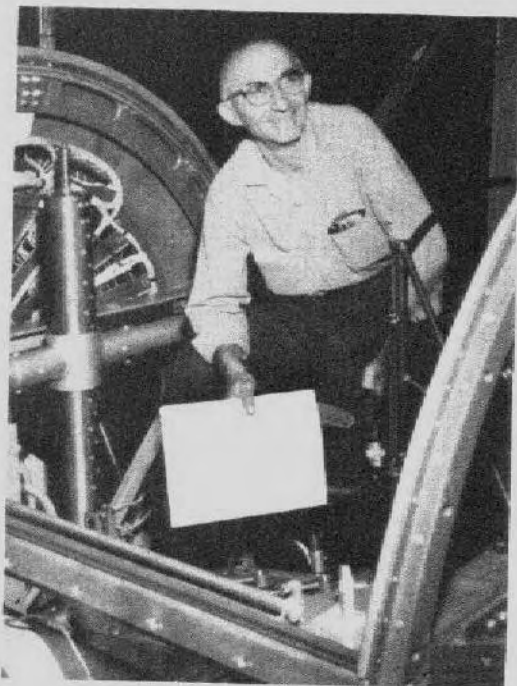
AMES BRIDGE CLUB WINNERS on Friday, November 23 were: Mr. and Mrs. Arthur Kaskey, first; Mr. and Mrs. Edward Collins, second; and Mr. and Mrs. Dwight Moody, third.

Winners for November 30 were: Bud McCloy and Luigi Cicolani, first; Dwight Moody and Bob Spaulding, second; and Ron Kauffman and Alan Levin tied with Mr. and Mrs. Thomas Snouse for third.

There are no more games scheduled until Wednesday, January 9, 1963, because of the Christmas holidays. Games will be held on Friday during December if enough call in to say they would like to have a game.

Art Kaskey says, "Thank you for your support of the club during 1962. 1963 will be an even better year. All you bridge players make a New Year's resolution to attend every game next year."

## Bengiveno New Chief of Simulator & Systems Service Branch



TONY BENGIVENO, new Chief of the SSS Branch, is pictured in the cab of the 5-degree simulator checking out one of the many installations in the equipment.

The appointment of Anthony R. Bengiveno as Chief of the Simulator and Systems Service Branch, Technical Services Division, was announced recently by Dr. Smith J. DeFrance, Director.

Mr. Bengiveno succeeds Walter Quigg who retired in October after 35 years of service.

The veteran aeronautical mechanic has been with the Center since April 1941. During that time he has worked on many major projects, from airplanes to simulators and space capsules.

In discussing his work Mr. Bengiveno said, "One of our primary responsibilities is the maintenance of the Five-Degrees-of-Freedom Simulator. We pull all the inspections and make sure it is in tiptop shape. A three-man crew is on it all the time.

"The transition from maintenance of aircraft to simulators has been easy," he continued. "We were always safety-conscious for the pilots when working on planes. The simulator doesn't have an engine but it does have a pilot. We work just as carefully on the simulator. With a four to six-G load the equipment has to be right!"

The pint-sized Tony Bengiveno has had a variety of experiences in his work. His size paid off during World War II when the shop was faced with a problem in the number three engine of a B-17.

Tony squeezed through an air duct in the right wing, got to the trouble spot without pulling the wing panel, and within hours had the plane ready for service.

It wasn't as easy for him where flight equipment was concerned. All the parachutes were too large. But a trip to the Air Material Area in Sacramento, where he was specially fitted, solved that problem.

For the past 14 years Mr. Bengiveno has been assistant chief of the branch, sharing the responsibility of maintaining and servicing equipment, and executing experimental designs in support of scientific research and technological developments.

Mr. Bengiveno and his wife, Annette, and their two children, Robert, 14, and Joann, 12, make their home in San Jose.

### LUNAR LANDING SIMULATOR (Continued from Page 1)

nozzles is bled from the X-14's jet engines.

Vertical descent and ascent by the simulator is accomplished by diverting the jet exhaust created by the X-14A's twin jet engines downward. Controllable cascade vanes in the exhaust pipe divert the exhaust gases.

In an actual landing, the rocket engine of a spacecraft would be supplied with its own oxygen source, whereas the X-14A obtains its oxygen for fuel combustion from the earth's atmosphere. In either case, the power principle is the same.

The center of gravity of the aircraft is located over the exhaust section, thereby giving vertical lift without additional control movements.

The importance of lunar landings simulation research was emphasized by Fred J. Drinkwater, III, research pilot for the investigation, when he said, "One of the most critical first landings ever to be made in the history of man will be that made on the moon, and in a very strange environment. All available methods of research should be utilized.

## Want Ads

For sale — Bicycle, girl's 20-inch, with basket. Good looking and in good condition. \$12. Call J. K. Dickson, 967-4520.

For sale — Bicycle, boy's 24-inch Schwinn. Excellent condition. \$30. Call Joseph Nickerson, DA 5-8844.

For sale — Lionel steam freight with automatic hopper car and other accessories — also, boy's 24-inch Schwinn bicycle. Call RE 6-6810.

For sale — Castleton china, "Lyric" pattern: gray on white, platinum band; International Sterling, "Royal Danish" pattern. Four, 4-piece place setting of each. Reasonable prices. Call Joanna Phifer, RE 9-3344.

For sale — TOPCON R single lens reflex 35 mm camera, 58 mm f/1.8 lens. Cost: \$300. Sell: \$175 — like new. — Mamiyaflex C2 professional 2 1/4 x 2 1/4 camera, 80 mm Sekor lens. Cost: \$175. Sell: \$120 — like new. Call Sal Rositano, San Jose 295-6149.

For sale — 1954 English Ford Anglia. Good condition. Very economical transportation. \$150. Call CH5-6561 after 6 p.m.

For sale — 1959 Buick LeSabre, 4-dr sedan. Power steering, WW, radio and heater. Call W. E. Kyle evenings, 258-3099.

For sale — Vacation trailer, 15-foot. Good condition — electric brakes. \$495. Call George E. Brown, 252-2776.

For sale — 1961 Falcon Wagon, 4-dr, automatic transmission, heater, good condition. Must sell. \$1700 or best offer. Call F. Gowen, UN 7-3577.

For sale — 1955 Pontiac, 2-dr hardtop, automatic shift. \$496. Contact M. Webster, 241-5135.

For sale — 1952 Chevrolet, 4-dr sedan, by original owner. In good condition except it needs clutch repair. Good tires, seat covers, radio and heater. \$125. Call B. E. Cunningham, UN 7-4233.

"A great similarity exists between the flight control system of our simulator and that proposed for a lunar craft," he added, "and that makes the X-14A a logical vehicle to investigate problem areas connected with the let-down and landing phases of the lunar mission."

The acceptability of the X-14A, from the pilot's viewpoint, as a research tool and as a possible trainer for spacecraft pilots has been verified by those who have flown the aircraft. It has been exceedingly well received and is considered "to fly well." Mr. Drinkwater remarked, "It's a friendly aircraft, the friendliest of all VTOL aircraft. It behaves itself and there are no mysteries about it."

A report titled "A Flight Evaluation of Lunar Landing Trajectories Using a Jet VTOL Test Vehicle" by L. Stewart, Rolls and Fred J. Drinkwater, III, is now being prepared for publication.